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PUBLICATION SERIES No. 12

**LIBRARY CLASSIFICATION
FUNDAMENTALS & PROCEDURE**

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950-972, UNIVERSITY AVENUE,
NEW YORK, N.Y. UNITED STATES.

LIBRARY CLASSIFICATION FUNDAMENTALS & PROCEDURE

WITH

1008 GRADED EXAMPLES & EXERCISES

BY

S. R. RANGANATHAN, M.A., L.T., F.L.A.

Librarian, Madras University Library,

Secretary, Madras Library Association

Vice-President, Indian Library Association

WITH A FOREWORD

BY

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TUNJUMANI

ACKNOWLEDGEMENTS

The thanks of the author are due to the following persons and institutions:

To the University of Madras for permission to publish the book which is based on the experience gained during the last twenty years in organising its library and teaching the Decimal and the Colon schemes of classification on a comparative basis to the students of its School of Library Science;

To the Madras Library Association for including the book in its Publication Series;

To Dewan Bahadur Dr. A. Lakshmanaswami Mudaliar, Vice-Chancellor, University of Madras, for his kind foreword;

To Mr. D. V. Rajalakshmanan, M.A., M.Sc., Research Student, Department of Statistics, University of Madras, for calculating the statistical constants and drawing the frequency curves given in Chapter 51;

To Mr. A. Thompson, D.A. and to my son Ch. T. R. Yogeswaran for the diagram in page 16;

To Mr. B. I. Palmer, F.L.A., Deputy Borough Librarian, Acton, for reading the proofs;

To Mr. K. M. Sivaraman, B.A., Head of the Technical Section, Madras University Library, for general help; and

To Messrs. Thompson & Co. Ltd., for the efficient, expeditious and obliging way in which the printing was done.

PREFACE

BY THE MADRAS LIBRARY ASSOCIATION

With the object of spreading the essential ideas of Library Movement and of directing thought towards the creation of efficient library service, the Madras Library Association inaugurated its Publication Series in 1929. Since then all the branches of library science are being systematically covered by the volumes of the series.

The foundations of the subject were laid in the *Five laws of library Science* (1931) which forms the basic volume of the series. It has gone out of print and awaits a second edition. So also with the volume on *Library administration* (1935). The place of libraries in schools and colleges was described in another volume, (1942) which also gave a summery of most of the volumes of the series. The first volume (1940) of *Reference service and bibliography* dealt with the theory and practice of the subject, while its second volume (1941) gave a systematic bibliography of reference books and bibliographies.

Another volume of the series entitled *Classified catalogue code* (1934), of which the second edition is in the press, turned out to be the first systematic code of its kind in book form. The *Theory of library catalogue* (1938) laid down for the first time the canons of cataloguing

PREFACE

which should guide the formulation of cataloguing codes and provided a suitable terminology to facilitate comparative study of different kinds of cataloguing codes.

Another volume of the series entitled *Colon classification* (first edn. 1933 and second edn. 1939) published a new scheme of classification which was devised in the Madras University Library. The *Prolegomena to library classification* (1937) formulated eighteen canons which should guide the invention of a scheme of classification and provided a suitable terminology to facilitate comparative study of different schemes of classification.

As the twelfth instalment of this Publication Series, the Association now publishes *Library classification: fundamentals and procedure*, the manuscript of which Mr. S. R. Ranganathan was good enough to place at its disposal. It depicts classification as translation into an artificial language designed to mechanise filiationary arrangement of books. Its graded examples and exercises make it a practical handbook for students and teachers of classification and it gives equal attention to the Decimal and the Colon schemes.

The Association hopes that this volume will circulate as widely as its predecessors and that it will help the libraries in India and elsewhere to organise their work in an efficient, scientific and serviceable way.

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FOREWORD

For a lay person to write a foreword for a book dealing with a speciality is always an unwise task. It is all the more so when that speciality is so new and so little known to the general public as Library Science. Cataloguing and classification are but two of the many branches of Library Science, though they are perhaps the most important. The many problems connected with a well organised modern library are increasing both in their number and complexity and Library Science, like all other sciences, is bound to be a growing science presenting opportunities for research.

Dewey, to whose genius we owe the first systematic attempt at classification, broke new ground and paved the way for systems of classification. The author of this book, Mr. S. R. Ranganathan, has attempted to show how the classification that he has devised approaches more closely the ideal of co-extensiveness and solves incidentally many other minor problems found insoluble by the Decimal Classification. The author presents a number of interesting problems in Library Classification and proves

how the classification that he has adopted solves these problems. In this latest book of his, Mr. Ranganathan has elaborated the general principles of classification and has added yet another to the number of useful books on Library Science which should appeal to all those interested in the problems of a modern library.

By so doing, he has done a distinct service to the cause of Library Science and it is hoped that his book will stimulate others in the field to further explore the possibilities of research in this direction.

A. L. MUDALIAR.

The Pattern of Classification

An Aid to Visualise

PHASES

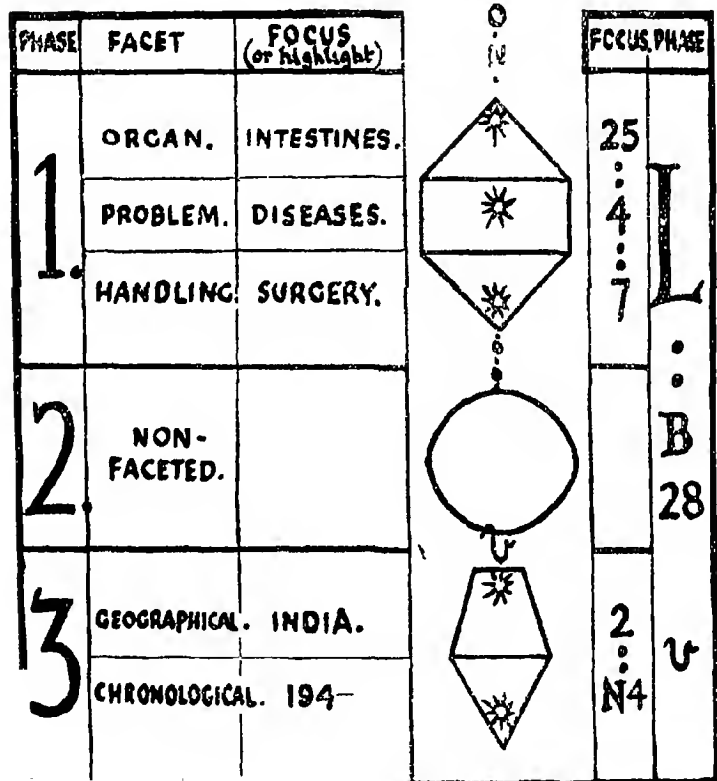
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In Specific Subjects

THE PATTERN OF CLASSIFICATION.

A VISUAL AID :-



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is a translation of

"History of Indian statistical studies
of surgery in intestinal diseases, 1944"

CONSPECTUS

This book has been growing during the last fifteen years in the classroom of the School of Librarianship in the Madras University Library. Intended as a practical guide to both student and teacher, it is illustrated with 1,008 graded examples and exercises.

It pays equal attention to two schemes of classification—the Colon and the Decimal. The new approach it makes to practical classification is largely due to the opportunity I have had to teach both the schemes together.

The searching analysis that this approach involves has inevitably led the book into the sphere of unsolved problems, where adventurous minds may continue exploration for themselves.

The following is from the third section (*Anuvāka*) of the first chapter (*Śikṣādhyaṃya*) of the *Taittirīya Upaniṣad*.

सह नौ यशः । सह नौ ब्रह्मवर्चसम् ।

अथातः संहिताया उपनिषदं व्याख्यास्यामः ।

अथाधिविद्यम् । आचार्यः पूर्वरूपम् ।

अन्तेवास्युत्तररूपम् । विद्या सन्धिः ।

प्रवचनसंधानम् । इत्यधिविद्यम् ।

Together may we two attain to glory; may illumination from the Infinite shine forth in us.

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Now let us reveal the (secret) lore of (fruitful) union. ...In the matter of basis of knowledge, the teacher is the type, the pupil the example, knowledge the relation. And the means to it is the forthgoing word.

These words of the *Veda* express a fundamental truth about the establishment of knowledge. A scheme of classification that has organic unity is conceived by a direct, global, intuitive act of consciousness or by a series of such acts; the designer does not analyse, he projects; he does not propose or construct, but disposes and creates. As for the classifier, with him classification soon becomes a habit and he forgets his difficulties as a beginner. If he meets new situations, he more often looks to the designer for help than tackles them himself. A teacher of classification, on the other hand, who has to help beginners must face every difficulty objectively. I have some experience both of designing and classifying, but it is as a teacher that I have learned most. It is the exigencies of teaching students of varying capacity that have slowly forged and tested the systematic procedure outlined in this book. It seems almost providential that the latest batch of students who came to me before sending it to press were mostly graduates fresh from college with no experience of library work and no knowledge but what their examination had forced them to acquire. Finally tested in that class, the tech-

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nique this book describes proved satisfactory to both teacher and taught. It was this experiment, also, that finally graded the examples and exercises.

These years of work in the classroom have made it very clear that classification is best taught as a process of translation. This view of a system of class numbers as an artificial language has not only cleared up innumerable learner's difficulties and humanised teaching, it has also lighted up many neglected corners and penetrated into the depths of the art and science of classification. It has brought to the surface factors that are at work in the intuitive designing of a scheme of organic unity. And this complete exposure of hidden elements has made it possible to develop an efficient and economical process of classifying—one that may therefore be of use even to veterans, for it finally rationalises their more empirical experience.

The first part elaborates the idea of classification as an artificial language—the need for it, its distinctive function of mechanising filiatory arrangement of specific subjects and its essential qualities.

Parts 2 and 3 are concerned with the technique of translation (practical classification). Part 2 deals with Facet-Analysis and Part 3 with Phase-Analysis. The commentary on Rule 22 should be particularly noted. The Facet-Ana-

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lysis shows how the bright new trail blazed by the genius of Melvil Dewey has dwindled and at last died out in the waste for lack of constructive and consistent Phase- and Facet-Analysis. Real appreciation of Dewey will not blindly resist these things just because he could not, in the then existing chaos, elaborate them; but accepting all that makes classification a virile art and science it will redirect his pioneering trail into more fruitful lands.

Part 4 is concerned with a review of the problems in classification including some that await solution. It considers: co-extensiveness of class numbers and specific subjects; individualisation of books and certain classes of works and publications; and the economy that can be effected by mnemonics—not superficial, verbal mnemonics but something deeper and more dynamic.

This part has also a chapter on translation. Here are shown the advantages that classificatory translation has over the usual literary kind and also its limitations. The reader in a library is not concerned with this technical language as such: its function is, by complete classification, to make even the most complex and scattered literature readily available to him. So far it is purely scientific; it is through the reference librarian that it rejoins the sphere of art, of the imponderable; it is here that translation in the deepest and most subtle sense becomes complete. For this exact description of

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books serves his knowledge of what is unclassifiable in them—their living spirit, influence, aroma—and releases to the full his capacity to relate it with living human need and aspiration.

Part 5 gives the translations (class numbers) for the examples and exercises distributed through the text. These correspond with 'Solutions' in mathematical books. It also deals with length of class numbers.

No one who reads so far in this book will think that a classificatory language is a professional indulgence or a jargon or a cipher that guards the mysteries of the craft from the profane. On the contrary it is the logical outcome of the essential urge and *raison d'être* of the library profession to make books as quickly, widely, and easily available as possible—to find with perfect promptitude every reader his book and every book its reader in spite of the incessant growth of the library. Now that knowledge all over the world is being diversified along one line and synthesised along another in a continuous almost bewildering flux in varied media, a *lingua franca* with fixed etymology and semantics, and a syntax capable of marshalling and presenting it all in the most helpful filia-tory order is indispensable. Whether he knows it or not, it is involved in the least demand of the most ordinary reader. It is known by those who serve him to be an imperative necessity. It is needed so to organise contributions to know-

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ledge of all kinds expressed in diverse languages as to establish contact between them and the readers in the measure of their affinity and specificity. Classificatory language is the only *lingua franca* answering this purpose. It must also be capable of growing with the need of the reader and the development of knowledge. A scheme of classification will, therefore, be judged by the presence in it of elements and mechanisms by which it can grow automatically in the measure of the ever-changing demand made on it.

Incidentally this book continues the introspective account of the genesis and the successive stages of development of the Colon Classification begun in the *Prolegomena to library classification* (pp. 191-195). This element will be found particularly in chapters 34, 35, 41, 42 and 43.

Lastly, a word about the numbering of the parts, chapters, sections and rules: the naturalness of the order of these numbers will become obvious if a decimal point is taken as understood before each of them.

One last word, for beginners only. The frequent repetitions to be found in parts 2 and 3 are intentional. They must all be read; the last with as much attention as the first. In this way the student will be drilled, so that the method of classification sinks into the subconscious, leaving the conscious mind free to deal with any unusual complication which may arise in individual cases.

PART I

A SCHEME OF CLASSIFICATION AS AN ARTIFICIAL LANGUAGE

11 It is found that readers almost invariably consider books in a library from the point of view of their subject. This is what we call the **SUBJECT APPROACH**.

Modern library practice seeks to fulfil in every possible way the following fundamental laws:

- 1 Books are for use;
- 2 Every reader his book;
- 3 Every book its reader;
- 4 Save the time of the reader, and
- 5 A library is a growing organism.

The implications of these fundamentals so far as classification is concerned are incidentally made clear in the *Five laws of library science*; but statement 11 indicates the central point.

12 Books in a library should be arranged according to their **SPECIFIC SUBJECTS**.

Statement 11 read with the Fourth Law leads to the inference that books on a given subject should be kept together.

But the phrase 'subject of a book' is rather vague. Suppose we have a book that studies 'Quadratic equations': some may say that its subject is 'Mathematics'; others, 'Algebra'; still others, 'Equations'; yet strictly, the subject is 'Quadratic equations'. Or of a book that describes 'Parliament in Queen Victoria's reign', some

A SYSTEM OF CLASSIFICATION

may say that its subject is 'History'; others, 'British History'; still others, 'Constitutional History of Great Britain'; yet strictly the subject of the book is 'History of the British Parliament between 1837 and 1901'. To counter vagueness in the use of the phrase 'Subject of a book' we introduce the term 'Specific subject'.

Statement 12 lays it down that books dealing with the same specific subject are to be kept together.

13 Specific subjects should be arranged in a FILIARY ORDER.

Statement 12 leads to the formation of as many groups of books as there are specific subjects represented in the library. The next point for consideration is the order in which the different groups should be arranged among themselves—in other words the best order among specific subjects.

Here again we must look to our fundamental laws for guidance. Let us begin with a particular example. A reader interested in 'Physics' may also need as auxiliaries 'Mathematics' (a tool-subject) on the one hand and something of 'Engineering' (as field for application) on the other. He will, therefore, be helped if books on 'Physics' are placed between those on 'Mathematics' and 'Engineering'. A reader interested in 'Diseases' may best be helped if in the arrangement 'Diseases' occurs between 'Physiology' and 'Therapeutics'. A reader interested in the 'Poetry of Tagore' may also need 'Bibliographies', 'Biography' and 'Critical literature' on his subject and he will best be helped if the poems of Tagore stand at the centre, as it were, of all auxiliary literature about him. In general, then, specific subjects should be arranged according to their mutual relations, the most closely related being nearest one another. This is what is implied in statement 13.

14 Arrangement of specific subjects should be MECHANISED.

It would be difficult to determine from the beginning, every time, the affinities of different specific subjects and fix the order of their arrangement: not only would this take far too much time (thus violating the corollary 'Save the time of the staff' implied in the Fourth Law), but it would be difficult even for one person to be consistent with himself and still more so for different persons among themselves. Moreover, books that embody the various specific subjects must, from time to time, be replaced in proper order on the shelves. It would be uneconomical to require for this job a person of sufficient ability to find out quickly their respective specific subjects and determine their filiationary order. On the contrary, it must be possible to entrust this work to persons of very ordinary ability. This can be done only if the arrangement can be fixed once and for all mechanically as statement 14 provides.

15 ALPHABETISATION of specific subjects by their names as a means of mechanising their arrangement must be RULED OUT, for the order they give to the specific subjects is NOT FILIATIONARY.

A simple example will make this clear. Let us take the ten Main Classes of the Decimal Classification. Arranged alphabetically they are

Fine arts	Philosophy
Generalia	Pure science
History	Religion
Literature	Sociology
Philology	Useful arts

It can be seen at a glance that 'Pure science' is an unwanted wedge between 'Philosophy' and 'Religion'. So also are 'Religion' and 'Sociology' between 'Pure

A SYSTEM OF CLASSIFICATION

science ' and its application ' Useful arts ' It would be happier too, if ' Fine arts ' and the highest art of ' Literature ' could be brought together.

Similarly if the 28 Main Classes of the Colon Classification are arranged alphabetically they will fall in the following obviously non-filiatory order:

Agriculture	Medicine
Botany	Mysticism and spiritual experience
Chemistry	Natural science
Economics	(general) and Biology
Education	Philosophy
Engineering	Physics
Fine arts	Political science
Generalia	Psychology
Geography	Religion
Geology	Science (general)
History	Social sciences (other)
Law	Technology
Linguistics	Useful arts
Literature	Zoology
Mathematics	

As a third example consider the following 23 topics in theology:

Theology (general)	Grace
God	Eschatology
Angels and devils	Death
Founders of religion	Intermediate stage
Saints	Judgment
Man & soul	Heaven and hell
Salvation	Rebirth
Predestination	Eternity
Free will	Immortality
Faith	Universe
Repentance	Revelation
Regeneration	

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The order in which they come as listed above is fairly filiatory. But alphabetisation will throw them in the following utterly non-filiatory order:

Angels and devils	Judgment
Death	Men and soul
Eschatology	Predestination
Eternity	Rebirth
Faith	Regeneration
Founders of religion	Repentance
Free will	Revelation
God	Saints
Grace	Salvation
Heaven and hell	Theology (general)
Immortality	Universe
Intermediate state	

Here is a fourth example: The parts of a government, as arranged in a filiatory order, will be:

Crown	Local bodies
Executive	Judiciary
Legislature	Administration
Party in opposition	

But alphabetisation will rearrange them in a wholly non-filiatory order as follows:—

Administration	Legislature
Crown	Local bodies
Executive	Party in opposition
Judiciary	

Any slice may be taken out of the schedules of the Colon and the Decimal Classifications and the classes alphabetised to demonstrate the utter destruction of filiatory order by alphabetisation. Indeed the phrase 'Alphabetical scattering' which has come into vogue clinches the substance of statement 15 and rules out alphabetisation as a means of mechanising filiatory arrangement.

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16 ALPHABETISATION of specific subjects by their names as a means of mechanising their arrangement must be RULED OUT on the additional ground that names of specific subjects are NOT STABLE.

Semantic changes are continually going on and can not be checked by librarians. Apart from subtle changes of meaning in words which themselves remain fixed the same term does not continue to be used for ever to denote any given specific subject. Within the last century, 'Natural philosophy' has given place to 'Physics'. If we depended on alphabetisation for the position of this subject, it should have been shifted from the 'N' group to the 'P' group of subjects, when the change was complete with an awkward transition period until the new usage was universally accepted. Another change during the last hundred years is that of 'Political economy' to 'Economics' which, with an alphabetical arrangement of subjects, would have shifted this subject from among Poultry, Peas and Pyorrhoea to equally heterogeneous neighbours—Eggs, Eagles and Eczema. At this rate, the arrangement of specific subjects in a library would continually be disturbed. On the ground, then, of lack of constancy, statement 16 rules out alphabetisation.

17 ALPHABETISATION of specific subjects by their names as a means of mechanising their arrangement must be RULED OUT on the further ground that names of specific subjects are NOT UNIQUE.

The name of each specific subject is by no means always unique in any natural language. This again will make its position uncertain. For example, 'Fuse' and 'Cut out' are equivalent words for the same idea: one takes it to the 'F' group, the other to the 'C' group. 'Acous-

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tics' and 'Sound' are equivalent terms expressing the same branch of Physics: one takes it to the 'A' group, the other to the 'S' group. Again the two words 'Homiletics' and 'Preaching' are used to express the same idea: one will take it to the 'H' group, the other to the 'P' group. Witness, in short, the myriads of 'see' references recommended by the *Subject headings for a dictionary catalogue* issued by the American Library Association.

Then the name of a specific subject sometimes consists of two or more words which may be taken in different orders and each such order will give a different position for the specific subject. For example is it to be 'History of Great Britain' (under 'H') or 'British History' (under 'B') or 'Great Britain—History' (under 'G')?

On the ground, then, of lack of uniqueness in the words used to denote a specific subject, statement 17 rules out alphabetisation as a means of mechanising arrangement.

18 ALPHABETISATION of specific subjects by their names as a means of mechanising their arrangement must be RULED OUT on the still further ground that the alphabetical position of a specific subject VARIES in different languages.

For example, in English 'Dry cell' would go to the 'D' group and 'Tuning fork' to the 'T' group. But in German, the former called 'Trockenelement' goes to the 'T' group, the latter (Stimmgabel) to the 'S' group. In French, the former (pile sèche) will appear under 'P', the latter (Diapason) under 'D'.

19 Since alphabetisation fails as a means of mechanising the arrangement of specific subjects in the preferred filiationary order, we must use ORDINAL NUMBERS.

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The dictionary lays it down that the use of an ordinal number is for "defining things' position in series". One can recall several ways in which it is used for mechanising arrangement—among guests at a big dinner, among students in a class and among patients awaiting their turn before the doctor. They are used for arranging withdrawal claims pending attention in a bank and suits pending enquiry in a court. The logical French, in Paris, have numbered-slips at bus-stops which prospective passengers tear off as soon as they arrive there. When the bus appears the conductor has a means of seeing that each man enters in his proper turn.

In all such cases the desired order is fixed on some suitable principle, then mechanised by means of ordinal numbers. It was Melvil Dewey who first popularised the application of this practice to the arrangement of specific subjects of books. He is, therefore, rightly referred to as the father of modern library classification. Since his time the system of ordinal numbers used to arrange specific subjects—the notation, as it is called—has been brought to the forefront in evaluating the usefulness of schemes of classification.

The ordinal numbers are different from the cardinal numbers with which we count. The same symbols—0, 1, 2, 3, 4, 5, 6, 7, 8, 9—are, however, used for both. Since in practice numbers are most often used for counting, the popular mind is less accustomed to their purely ordinal values. Moreover, it often happens that numbers are used at the same time both for arranging and counting. This also stands in the way of the purely ordinal values being distinguished from the purely cardinal ones. It appears that even among mathematicians, the properties of ordinals have not yet been investigated and exploited as those of cardinals. They will be only if ordinals are used by themselves and independently of cardinals in as many circumstances as possible. They should not be linked up

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to one another. In this and other books of mine it is pure ordinals that are used to number chapters. They give no information about the total number of chapters. To find it, one must actually count them. The use of ordinal numbers to mechanise the arrangement of specific subjects provides a splendid opportunity to declare, so to speak, the independence of ordinals. The students of classification should, therefore, clear their mind completely of the shackles induced by the long linkage of ordinals and cardinals; they should not hesitate to use all the freedom they gain by so doing. We shall here mention one such freedom, which is being already exercised to some extent.

The scope of cardinal numbers is limited by the attachment to them of quantitative value. New basic ones can not be invented easily. But new basic ordinal numbers can be improvised by simply defining their relative order. In the Expansive Classification of Cutter, for example, the capital letters of the Roman alphabet are taken as the basic ordinals instead of the traditional Arabic numerals. Cutter was a pioneer among librarians in this matter. The Colon Classification has gone even further: the ordinal series 0, 1, 2, 7, 8, 9 is augmented in it by the addition of A, B, C.....X, Y, Z, their ordinal values so being defined that among themselves, they fall into the above ascending order, A following 9. The same classification has also used “:” as the symbol for a still another ordinal number defined to lie between “0” and “1”. In its second edition “—” appears as another ordinal lying between “0” and “:,” Δ too is used as a new ordinal defined to lie between “M” and “N”. In its later editions, the Decimal classification is venturing to add capital Roman letters to its stock of basic ordinals which had been, till then, severely restricted to Arabic numerals. The Classification Décimale of the International

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Institute of Bibliography has added the following extra ordinal numbers:

: , — , + ; = , () , ∞ , “ ” .

That we have freed ourselves from the limitations of cardinal numbers should not lead us to improvise ordinal, ones at every turn, for then we might find ourselves in the position of Midas: our freedom must be used with circumspection. The Classification Décimale, for example, has perhaps a little overstepped the bounds of safety. Some authors, anyway, find that most of the purposes which that scheme seeks have been achieved by the Colon Classification with a less complicated system of notation.

It is equally bad, on the other hand, not to use our freedom at all. A statement of W. C. Berwick Sayers seems unfortunately to have led some into quite unnecessary self-denial. To understand this statement of his, we must define a few terms. A single or isolated or primary symbol occurring in a notation is called a *Digit*. The digits which belong to any one conventional group—such as the Arabic numerals, the capital letters of the Roman alphabet and the small letters—are said to be of one *SPECIES*. A notation which uses one and only one species of digits is *PURE* and one using two or more species, *MIXED*. Sayers puts down the following as the twelfth canon of classification: “The notation should be pure; that is to say it should be composed entirely of one kind of symbol”. E. C. Richardson, on the other hand, is for a notation “using mixed symbols” and he further observes that “every practical system sooner or later does make use of both letters and figures”. As Henry Evelyn Bliss says, there is psychology as well as common sense back of this statement. A mixed notation of letters and figures combined preferably with convenient punctuation marks, is virtually more legible than a notation of figures alone. The canon of purity laid down by Sayers is not necessary at

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all. We must within limits go in for a mixed notation and thus exercise the freedom furnished by the declaration of independance of ordinals against cardinals.

191 In arranging specific subjects in a filiatory order, we should RENDER them into ordinal numbers.

192 CLASSIFICATION is the RENDERING of specific subjects into ORDINAL NUMBERS according to a preferred scheme designed to secure filiatory order among them.

1921 Ordinal numbers representing specific subjects in accordance with a scheme of classification are called CLASS NUMBERS.

For convenience we shall call CLASSIFICATIONIST a person who devises a scheme of classification and CLASSIFIER a person who constructs the class numbers of specific subjects in accordance with a preferred scheme. The responsibility of securing filiatory order rests on the classificationist and he must keep in view not only known specific subjects but also those that are likely to appear from time to time. The CANONS OF CLASSIFICATION that should be followed by a classificationist have been enunciated by W. C. Berwick Sayers,¹ Henry Evelyn Bliss² and myself.³ A primer on the subject has been written by W. Howard Phillips.⁴

The responsibility of the classifier is to construct class numbers in strict accordance with the preferred scheme of classification and in conformity with the canons that apply to him.

1 Manual of classification, 1926.

2 Organisation of knowledge in libraries. 1932. 1939.

3 Prolegomena to library classification. 1937.

4 A primer of book classification. 1937.

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In this book we shall confine ourselves to two schemes of classification: the Decimal Classification of Melvil Dewey and my own Colon Classification. A short history of each will be found in the *Prolegomena to library classification*.

1922 A class number according to the Decimal Classification will be called the DECIMAL NUMBER; according to the Colon Classification, the COLON NUMBER.

According to the *Decimal classification*, the Decimal Numbers constitute the only international language, as it consists solely of Arabic numerals used all over the world. It says: "513 is section 3 (geometry) of division 1 (mathematics) of class 5 (pure science). This number giving class, division, section, subsection, if any, is called the class number" i.e. the Decimal Number.

According to the *Colon classification* a Colon Number is "a symbolic translation of the subject of the book." It is also described as "an ordinal number which consists of an intelligible concatenation of one or more of the ten Arabic numerals, the fifty-two letters of the Roman alphabet (Capital and small), the symbol Δ , a colon and a dash". By "intelligible" is meant intelligible in accordance with or in the light of rules framed for the purpose.

193 A system of class numbers constructed according to a scheme of classification constitute an ARTIFICIAL LANGUAGE—the CLASSIFICATORY LANGUAGE; the system of Decimal Numbers is the DECIMAL LANGUAGE; of Colon Numbers, the COLON LANGUAGE.

A language has been defined as "a vocabulary and way of using it prevalent in one or more countries". An

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artificial language is one devised for a specific purpose. A cipher, for example, is an artificial language designed to make communication secret. A code language is designed to make communication both secret and brief. The symbols and formulae of chemistry constitute an artificial language designed, with a special morphology and syntax of its own, to facilitate the expression and inference of chemical relationships. The symbolic language of mathematics forms a means of mechanising the process of making valid inferences from given premises. It too has its own morphology and syntax—its own grammar. Let us illustrate by a simple problem of the 'Think of a number' type: "I think of a number, multiply it by 2, add 7, divide by 5 and subtract 2; The result is 1. What is the number?" We introduce the symbol n to stand for the number and use all the usual symbols of algebra. Then my statement stands translated as

$$\frac{2n+7}{5} - 2 = 1$$

Solving by the rules of algebra we get successively

$$\begin{array}{rcl} \frac{2n+7}{5} & = & 3 \\ 2n+7 & = & 15 \\ 2n & = & 8 \\ n & = & 4 \end{array}$$

The language of mathematics has mechanised the process of thought and helped us to answer the question.

In a similar way a system of class numbers is an artificial language designed to mechanise arrangement of specific subjects.

1931 A classificatory language must be BRIEF.

We have defined classification to be a means of mechanising the arrangement of books in a filiator order according to their specific subjects. Here we look upon

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books as embodied knowledge. Now books are comparatively small in size. For compactness they are usually made to stand side by side on their lower edges with only the spines visible. The class number of a book must, therefore, be written on its spine and, so that one need not look up and down the spine of every book, uniformly at a distance of one inch from the bottom. Since books are, on an average seldom more than one inch thick, the digits of the class number, written horizontally so as to be read with ease, should form a line not longer than an inch and preferably shorter.

1932 A classificatory language must admit of **SPEEDY WRITING**.

Brevity spatially considered (compactness) does not necessarily imply speed of execution: a tiny picture full of microscopic details might take weeks to paint. For speed as well as brevity the basic characters of a classificatory language and the method of combining them into class numbers, should be simple.

Speed of writing is the more important since the class number of each book must be entered in several places—on the spine, on the date-label, on the back of the title-page; on some determined page inside the book; in the accession register; in the shelf-register; on the book-card; and in its main and numerous added entries in the catalogue. However brief a class number may be, since it has to be written in more than a dozen places, the effect of brevity will be frustrated unless it admits of speedy writing.

1933 It will be a decided advantage if the ordinal numbers used to mechanise the arrangement of specific subjects in a filiator order are read as **DECIMAL FRACTIONS**, not as integers.

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Let us first realise a fundamental difference between integer notation and decimal-fractional or, more briefly, decimal notation. Let us begin with the number 346 and let us add 5 to the right end. We get 3465. If we read the numbers as integers, in the former the place-value of 3 is 300, that of 4 is 40 and that of 6 is six. In the latter, they change to 3000, 400 and 60 respectively. On the contrary, let us imagine a decimal point to be understood to the left of 3. Then, in both 346 and 3465, the place-value is the same for the common digits viz. 3|10 for 3, 4|100 for 4 and 6|1000 for six. In the integral notation, the place values of the digits of a number change when an extra digit is added at the end; while in the decimal notation the addition of an extra digit at the end does not affect the place values of the digits. When a class is subdivided, the number of the subclass can, therefore, be derived from that of the original class by simply adding a digit at the end only if the decimal notation is used. The subdivision can be repeated as often as desired and the number of the ultimate subclass derived from the number of the original class by simply adding to it the necessary number of extra digits. With decimal notation, the numbers of all such subclasses will be close to the original number and thereby secure that the original class and the subclasses be close together—just what filiatory order wants.

This facility is indispensable if we are to provide for the continual subdivisions of class numbers as and when new subclasses get created. A great mishap in the history of library classification is that the influential Congress Classification, under the auspices of a Government and hence assured of being always kept up to date, has failed to utilise this great advantage of decimal-fraction notation over the integer notation.

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1934 Each of the class numbers constituting a classificatory language should have a **UNIQUE** and **STABLE MEANING**.

It is notorious what havoc ambiguity can play in ordinary language where there is hardly a word with a unique meaning. What a variety of ideas, for example, the noun (let alone the verbal use) 'number' itself represents!—integers, rational numbers, irrational numbers, transcendental numbers, imaginary and complex numbers and so on. 'Cotton' may mean either the cotton-plant or the cotton-fibre or a woven cloth. 'Prayer' may be public or private supplication, ritual duty or (with the Christian mystics) a process of union with God, it may refer to widely various contexts, intentions, traditions and experiences. It is doubtful if there would be so many schools of philosophy but for lack of uniqueness in the meaning of expressions. Politics seems to be the field *par excellence* for quibbling of all kinds. One of the things that stands in the way of economics developing into a full-blown science is no doubt lack of uniqueness and stability of the meaning of its terms. The fact that some of the best brains of a community can be engaged in a most lucrative way by bench and bar is perhaps most significant of all in this connection.

There need be no fear that an artificial language in which the uniqueness of meaning of its terms is fixed will suffer the sort of degradation and fragmentation that ancient terms have had in passing through countless semantic phases into modern speech. Quite apart from the fact it is designed for and confined to strictly professional use, its very nature resists such changes, for it is supported by its own canons: it either makes its own exclusive kind of sense or ceases to exist altogether.

194 The **SCHEDULES** of a scheme of classification constitute a **DICTIONARY** by means of

which we can translate from ordinary to classificatory language and *vice versa*.

1941 The schedules of the Decimal Classification are like a TOURISTS' VOCABULARY which lists not only fundamental words but also their declensional forms, with phrases, clauses and sentences.

The Decimal Classification is, therefore, usually described as a scheme of ready-made class numbers. So far as it goes it is easy to use. But when new specific subjects (not anticipated and listed by the classificationist) appear, it fails us.

1942 Just as an ordinary dictionary lists only fundamental words and not their declensional forms or all the phrases, clauses and sentences in which they occur, so the schedules of the Colon Classification list only FUNDAMENTAL CONSTITUENT TERMS and not derived composite terms.

The Colon classification is, therefore, generally, called a composite scheme. It has been compared with a Meccano set. Its standard unit schedules correspond with the standard pieces of such a set. By combining these standard pieces in different ways many different objects can be constructed. The Colon Classification is not, therefore, so easy for a beginner as the Decimal Classification. But when we have to deal with new specific subjects not anticipated and listed by the classificationist, it will not fail us as the Decimal Classification does.

Following another line, Decimal classification has been compared to patent medicine applicable to certain common diseases and the Colon classification to a well-stocked

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pharmacy where medicine is prepared according to prescription to suit specific needs and which can therefore meet any medical need that may arise.

1943 Construction of Colon Numbers requires knowledge of the RULES OF CLASSIFICATION given in the first part of the *Colon Classification*.

These rules correspond with the grammar of a language. It is a matter of experience that translation with the aid of an ordinary dictionary demands a knowledge of grammar. Since the schedules of the *Colon Classification* are like a dictionary and not like a tourists' phrase-book, translation of the names of specific subjects into Colon Numbers requires a knowledge of the grammar of that classificatory language—of the rules of *Colon Classification*. The rules in chapters 0 to 8 are general. The rest are special to different Main Classes.

Even the Decimal Classification which intends to give ready-made class numbers has found the need for some rules at least. Some of these are given in the Introduction, while many are scattered in the Complete Tables.

1944 If a specific subject can not be given a Decimal Number that totally represents it but may be assigned one or other of two or more, each of which represents it only partially, choice between them must be made CONSISTENTLY. For this purpose one should use a guide like Wm. Stetson Merrill's *Code for classifiers*.

For example, *The Panama Canal conflict between Great Britain and the United States* can only be given a Decimal Number that represents either 'Panama Canal' or 'Foreign relations of Great Britain' or 'Foreign relations of the United States'; no Decimal Number can be found

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that expresses all the three ideas together. But Rule 107 of the *Code for classifiers* recommends that it be given the Decimal Number for Panama Canal (Economics). When the *Code* too fails each library must adopt some convention and follow it consistently. For example, the specific subject 'Night-work in foundries' cannot be totally represented by a Decimal Number. Either that for 'Night-work' or that for 'Foundry labour' must be chosen and adhered to.

PART 2

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CHAPTER 21

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210 To DETERMINE THE SPECIFIC SUBJECT of a book as a preliminary to translating it into classificatory language, examine title, contents-page and preface or the whole book, in this order as far as may be necessary.

The work of the classifier falls into two parts:

(1) determining the specific subject of the book and (2) translating it into class number, just as any other translator must first understand his text and then express the meaning in another language. In most modern books on positive sciences the title is a reliable index of the specific subject. But in other types of books—works of literature and the older classics in other domains as well (especially oriental ones)—the title is often (1) fanciful, (2) oblique, (3) partial, (4) ambiguous, (5) under-stated, (6) over-stated, (7) elliptical, or (8) misleading in other ways. Here are some examples:

11 A solid, thought-provoking book by Maude Royden and others has the title *Seven pillars of fire*. The title cannot, obviously, determine its specific subject. The contents-page shows that it is a symposium of the following seven essays:

The way of religion by Maude Royden;
The human fact by L. P. Jacks;
Erewhon come true by A. E. Richardson;
The riddle of money by the Marquis of Tavistock;

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The art within the bellicose civilisation by C. R. V. Nevinson;

The coming reformation by Bernard Acworth; and
Utopia while you wait by E. Denison Ross.

Even the contents-page proves to be of insufficient help in fully determining the specific subject. When the whole book is studied and its background properly probed, the main aim of the book is seen to be an etiological analysis of the ills and maladjustments of society. Its specific subject is now determined exactly in the following terms: *A symposium on the etiology of social pathology.*

12 *Lilavati* is the title of a charming classic in Sanskrit by Bhaskara. It is known that Lilavati was the daughter of the author. A perusal of the contents shows that the specific subject of the book is *Elementary mathematics.*

13 *The newer alchemy* of Lord Rutherford is another fanciful title of recent origin. A perusal of the book shows that its specific subject is *Radio-activity.*

21 The obliquity of W. W. Greg's *Calculus of variants* can be got over and its specific subject determined as *Editing of manuscripts* by a perusal of the preface in which the author himself warns against the possibility of 'mathematics' being recalled to the minds of unwary readers by the pretentious title of his book.

22 Merian C. Cooper has given to one of his books the oblique title *Grass*. By rapidly turning through its pages, one can find that the specific subject of the book is *Migration of tribes in Persia.*

23 Rudolf Eucken has written a book with the oblique title *Naturalism or idealism* which contrasts the two schools of metaphysics in order to establish 'idealism'. The specific subject of this book could, therefore, be determined as *Idealism* only after a perusal of the whole book.

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3. A book by Harry Hamilton Laughlin has the title *Duration of the several mitotic stages in the dividing root-tip cells of the common onion*. This title expresses its scope only partially. For a perusal of the whole book shows that its purpose is not to study onions but to investigate the *Dynamics of mitosis*. In fact we read in page 25 of the book: "The temperature-range having been decided upon, it is next necessary to select suitable material. The onion, having proven to be so well adapted to the sort of study in hand, was chosen for the completer investigations. Not only has it long been known to show mitotic rhythm; but it presents a homogeneity of samples not so easily obtained in other types of organisms.... Moreover, one sample may be taken without disturbing the activity of the others, at least during the few hours of sampling. They are not difficult to prepare cytologically Finally the cells are large and the rate of mitotic activity permits convenient (10-minute) sampling intervals." Thus it is clear that this comprehends mitosis in plants in general and not merely of onions.

41 Fletcher Durrell's *Co-operation, its essence and background* has such an ambiguous title that it led experts in economics to recommend its purchase. When it arrived, a perusal of the book showed that its specific subject was *Social ethics*.

42 Raoul Plus's *Réparation* is another example of ambiguous title which recalls to mind post-war reparation policies. But a perusal of the book shows that this book deals with 'reparation' in the sense 'to offer to God (to our Lord) compensation for the sins of others.'

5 The short title *Elementary mathematics* under which the publishers announced an English translation of Felix Klein's *Elementar Mathematik von höheren Standpunkte* was so modest that it was declared to be merely a book

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on Arithmetic and, therefore, unsuited to a university library. The classifier should beware of understatement of the kind made by the title of a book and determine the exact specific subject by a perusal of the book.

6 An example of overstatement is given by A. S. J. Barter's *International banks*. The title would tempt one to take the specific subject of the book as *Banks of international settlement*. But the preface and the text shows that the book is confined only to "the London banks operating mainly in foreign countries" and the specific subject is more appropriately *Commercial banks*.

7 Elliptical titles occur quite often and here is one example. Maisie Spens has called one of his books *Concerning Himself*. It is on the life of Jesus. More examples will be found in Chapter 23.

211 As a first step in translating the name of a specific subject from ordinary language into a classificatory one, run your eyes down the schedule of main classes and fix the MAIN CLASS to which it belongs.

Every scheme of classification has its schedule of Main Classes. In the *Decimal classification* it is called "First Summary". In the *Colon classification* the Main Classes are scheduled in Chapter 1 of Part 2. The schedule of Main Classes is also referred to occasionally as the 'lay-out' of the scheme. In terms of the terminology of the *Prolegomena to library classification*, the Main Classes constitute the Array of the First Order of a scheme.

Beginners generally find this stage difficult. The following rules will help.

212 Find the CORRECT MEANING of the terms used in the name of the specific subject by (1) reading relevant sentences in the book,

(2) consulting a good dictionary (Webster's is particularly useful for this purpose), (3) looking up an encyclopaedia and in exceptionally difficult cases (4) consulting specialists in the subject.

In most cases error creeps in because of faulty or inadequate understanding of the denotation of the terms occurring in the name of the specific subject. For example, 'Entomology' was the specific subject given to freshmen. They had a vague notion of this term and as usual this little knowledge proved dangerous, for it never occurred to them that they should clarify their idea by any of the methods mentioned in the rule. They selected 'Biology' as its main class in preference to 'Zoology'. A few questions were enough to disclose that their idea of the denotation of these two terms also were rather vague. They were asked to look up the dictionary. The following were the definitions:

Entomology is the science of insects.

Biology is the science of plants and animals.

Zoology is the science of animals.

Then they readily determined 'Zoology' as the Main Class of the specific subject in question.

The freshmen were all graduates and were not in any sense below normal. This actual occurrence is cited to emphasise the need for and the kind of caution to be exercised at this stage.

213 VERIFY your result by looking through the constituent schedules or the schedules of subdivision of the main class you have fixed upon and if you are not satisfied try any other main class that seems equally appropriate.

1 'Meteorology' was the specific subject for which the freshmen were asked to find out the Main Class.

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"Physics, of course" was the ready reply. They were asked to verify by looking up the constituent schedules of 'Physics' in the *Colon Classification* and the subdivisions of the same in the *Decimal classification*. No mention of meteorology! And they were puzzled. They could not guess any other Main Class as appropriate. The dictionary was looked up. 'Physics' was defined as the "science treating of properties of matter and energy or of action of different forms of energy and matter in general (excluding chemistry and biology)". The class still stood puzzled. The phrase "in general" was emphasised and the class was asked to look up "Meteorology" in the dictionary. "Study of motions and phenomena of atmosphere especially for weather forecasts; atmospheric characteristics of regions", was the definition found. The class was helped to realise that the matter dealt with in 'Meteorology' was not *matter in general* but *localised matter*—matter forming and found in the gaseous cover of the earth's crust. This satisfied the class why it did not find a place in 'Physics'. Moreover the word "Weather" incidentally recalled to their mind that they had read about it at school in their geographical text-books. This led them to look up the meaning of the word 'Geography'. It was defined as the "science of the earth's surface form, physical features, natural and political divisions, climate, production, population etc." The occurrence of the word 'Climate' decided the issue. The constituent schedules of the Main Class 'Geography' were examined in the *Colon classification*. The term 'Meteorology' stared at the eyes in black type. Thus, the Main Class was determined as 'Geography' in the *Colon Classification*.

But the term did not occur among the subdivisions of 'Geography' in the *Decimal Classification*. That led to a further trial. It was recollected that 'Geology' was another subject dealing with the earth's surface and on

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a reference to its schedules, 'Meteorology' was found to have a place in it.

2 'Relation between landlord and tenant' was another specific subject prescribed for finding the Main Class. 'Economics' was first pitched upon. But the constituent schedules of this Main Class did not mention the specific subject. There was, however, a division called 'Rural economics'. It was, however, felt that 'Rural economics' was something different from the 'Relation between landlord and tenant'. One student suggested 'Sociology'. But its constituent schedules did not list the specific subject in question.

Then the term 'Tenant' was looked up in the dictionary and it was found defined as "one who occupies land or tenement under landlord; (law) person holding real property by private ownership, also defendant in real action". The definition brought the Main Class 'Law' to the centre of attention. A perusal of the constituent schedules of 'Law' in the *Colon classification* showed 'Landlord and tenant' printed in black type. The schedule under 'Law' in the *Decimal classification* contained the division 'Real property'. Thus 'Law' was determined as the Main Class.

It had to be pointed out to the class that they wandered into other Main Classes like 'Economics' and 'Sociology' as they overlooked the fact that the relation between landlord and tenant was mainly a legal one, though it had, no doubt, economic and sociological implications.

3 'How to behave towards relatives' was another subject prescribed. The class again thought of 'Sociology' as its Main Class; but it proved a failure when the schedules of that class were examined. The term "Sociology" was then looked up in the dictionary and it was defined as the "science of the development and nature of human society". While this involved 'Human

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society' as the unit of study, the specific subject under consideration concerned itself only with the behaviour or conduct of individuals. An emphasis on these words made the class think of 'Ethics'. Looking up the schedule of Main Classes, 'Philosophy' was determined to be the Main Class of the specific subject in question. A reference to the schedules of 'Philosophy' confirmed the decision.

To avoid such difficulties in the first step of translation, Bliss would provide explicit definitions of the terms in the schedules of a scheme of classification. Our contention is that a systematically arranged schedule of classes and sub-classes inherently defines the terms without need for additional words of formal definition. If the classifier guides himself by the Canons of Context¹ and Enumeration² he cannot go wrong. Rule 213 virtually amounts to directing that the determination of the Main Class should be tested by these Canons.

214 Proceed with this METHOD OF TRIAL AND ERROR until the correct Main Class is settled.

215 If you are not satisfied that you have arrived at the correct Main Class, take the one that seems to you to be most nearly right and pass on to the next stages in translation. At one of them the necessary CORRECTIVE will appear; then you will have to begin again with a new Main Class.

Beginners may often have to retrace their steps in this way; but it may happen to veterans too. For books, that

1 RANGANATHAN (S. R.). Prolegomena to library classification. (Madras Library Association, publication series 6). 1937. Pp. 71-72.

2 *Ibid.* Pp. 69-71.

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baffle even a well-trained mind, appear occasionally. An experience of this kind has been described in an article in the *Modern Librarian*.¹

216 From now on, the Main Classes of the Colon Classification will be taken as the VIRTUAL Main Classes of the Decimal Classification also.

The Colon and the Decimal Classifications have the following seven Main Classes in common:

Colon No.	Main Class.	Decimal No.
[No number]	Generalia	0
N	Fine arts	7
O	Literature	8
P	Linguistics	4
Q	Religion	2
R	Philosophy	1
V	History	9

Of the remaining 21 Main Classes of the Colon Classification 17 are formally subclasses of the Main Classes in the Decimal Classification, as shown below:—

Colon No	Main Class	Decimal No.
B	Mathematics	51, 52, 5311
C	Physics	53
D	Engineering	62
E	Chemistry	54
F	Technology	66
G	Biology	57
H	Geology	55, 56
I	Botany	58
J	Agriculture	63

¹ RANGANATHAN (S. R.) A challenge in classification. (*Modern Librarian*, V. 9. 1939. Pp. 41-47).

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Colon No.	Main Class	Decimal No.
K	Zoology	59
L	Medicine	61
S	Psychology	15
T	Education	37
U	Geography	91
W	Political science	32, 35
X	Economics	33, 38, 65
Z	Law	34

For beginners it would be a continual harassment to have to consider certain subjects under two different Main Classes in the two schemes. Moreover, it is only formally that 'Mathematics', 'Physics' etc. are subclasses in the Decimal Classification. In fact they are no less Main Classes than 'Philosophy' and 'Religion'.

This rule, therefore, seeks for all practical purposes to equalise the two lists of Main Classes. In the Colon Classification all the Main Classes lie in the schedule of Chapter 1 of Part 2 and are represented by one digit. In the Decimal Classification, some lie in the First Summary and some in the Second Summary. The latter are represented by two digits and the rest by one digit only.

217C. For the FIRST DIGIT of the Colon Number of a specific subject write down the number of the Main Class finally arrived at.

217D. For the FIRST or the FIRST Two DIGITS, as the case may be, of the Decimal Number of a specific subject write down the number of the Main Class finally arrived at.

218 If the specific subject is virtually Co-EXTENSIVE with the Main Class, the digit (or

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the two digits in certain cases of the Decimal Classification) representing the Main Class will be its full CLASS NUMBER;* then the translation of its name *i.e.* its classification is COMPLETE.

Otherwise, the classification is incomplete and to complete it, the translation must be carried further in accordance with the rules laid down in the succeeding chapters.

Examples

1 BOWLEY (Arthur L.). A general course of pure mathematics from indices to solid analytical geometry.

Its Main Class ' Mathematics ' is virtually co-extensive with its specific subject. B and 51 are, therefore, its respective Colon and Decimal Numbers.

2 SAUNDERS (Frederick A.). A survey of physics for college students.

Its Main Class ' Physics ' is virtually co-extensive with its specific subject. C and 53 are, therefore, its respective Colon and Decimal Numbers.

3 STRANGE (William Lumisden). Principles of irrigation, roads etc.

Its Main Class ' Engineering ' is virtually co-extensive with its specific subject. D and 62 are, therefore, its respective Colon and Decimal Numbers.

4 WELLS (H. G.) *etc.* The science of life.

Its Main Class ' Biology ' is virtually co-extensive with its specific subject. G and 57 are, therefore, its respective Colon and Decimal Numbers.

* There is a convention, that the Decimal Number should always contain not less than three digits. According to this one or two zeros should be added to the digit or digit representing the Main Class to arrive at the full Decimal Number in such cases. But that convention is ignored in the following examples

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5 BRANSON (Charter R.) *etc.* Text-book of geology.

Its Main Class 'Geology' is virtually co-extensive with its specific subject. H and 55 are, therefore, its respective Colon and Decimal Numbers.

6 STRASSBURGER (Eduard). Text-book of botany.

Its Main Class 'Botany' is virtually co-extensive with its specific subject. I and 58 are, therefore, its respective Colon and Decimal Numbers.

7 FREEM (W.). Elements of agriculture.

Its Main Class 'Agriculture' is virtually co-extensive with its specific subject. J and 63 are, therefore, its respective Colon and Decimal Numbers.

8 PARKER (T. Jeffery) *etc.* A text-book of zoology.
2 V.

Its Main Class 'Zoology' is virtually co-extensive with its specific subject. K and 59 are, therefore, its respective Colon and Decimal Numbers.

9 MENKINS (Jonathan Campbell). Practice of medicine.

Its Main Class 'Medicine' is virtually co-extensive with its specific subject. L and 61 are, therefore, its respective Colon and Decimal Numbers.

10 OERTAL (Hanns). Lectures on the study of language.

Its Main Class 'Linguistics' is virtually co-extensive with its specific subject. P and 4 are, therefore, its respective Colon and Decimal Numbers.

11 NICHOLSON (J. A.). Introductory course in philosophy.

Its Main Class 'Philosophy' is virtually co-extensive with its specific subject. R. and 1 are, therefore, its respective Colon and Decimal Numbers.

12 McDUGALL (William). Psychology: the study of behaviour.

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Its Main Class 'Psychology' is virtually co-extensive with its specific subject. S and 15 are, therefore, its respective Colon and Decimal Numbers.

13 SKINNER (Charles E.) *etc. Eds.* An introduction to modern education etc.

Its Main Class 'Education' is virtually co-extensive with its specific subject. T and 37 are, therefore its respective Colon and Decimal Numbers.

14 GILCHRIST (R. N.). Principles of political science.

Its Main Class 'Political science' is virtually co-extensive with its specific subject. W and 32 are, therefore, its respective Colon and Decimal Numbers.

15 BHATNAGAR (Nand Lal). Elements of economics.

Its Main Class 'Economics' is virtually co-extensive with its specific subject. X and 33 are, therefore, its respective Colon and Decimal Numbers.

16 AMERICAN INSTITUTE OF PHYSICS. Review of scientific instruments. 1930—.

The specific subject of this belongs to the Main Class 'Science (general)' but is less extensive than it. A and 5 are, therefore, merely the respective first digits of its Colon and Decimal Numbers. The translation of its name into class number *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of the later chapters.

17 TITCHMARSH (E. C.). The Zeta-function of Riemann.

The specific subject of this book belongs to the Main Class 'Mathematics' but is less extensive than it. B and 51 are, therefore, merely the first and the first two digits respectively of its Colon and Decimal Numbers. The translation of its name into class number *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

18 JNANANAND (Swami). New and precise methods in the spectroscopy of X-radiations.

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The specific subject of this book belongs to the Main Class 'Physics' but is less extensive than it. C and 53 are, therefore, merely the first and the first two digits respectively of its Colon and Decimal Numbers. The translation of its name into class number *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

19 BRILLIE (Eugene). Traction on rails by internal combustion engines.

The specific subject of this book belongs to the Main Class 'Engineering' but is less extensive than it. D and 62 are therefore, merely the first and the first two digits respectively of its Colon and Decimal Numbers. The translation of its name into class number *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

20 SEN-GUPTA (N. N.). Development of the heavy chemical industries in India. 1937.

The specific subject of this book belongs to the Main Class 'Technology' but is less extensive than it. F and 66 are, therefore, merely the first and the first two digits respectively of its Colon and Decimal Numbers. The translation of its name into class numbers *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

21 OSTERHOUT (W. J. V.). Some fundamental problems of cellular physiology.

The specific subject of this book belongs to the Main Class 'Biology' but is less extensive than it. G and 57 are, therefore, merely the first and the first two digits respectively of its Colon and Decimal Numbers. The translation of its name into class numbers *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

22 DALE (T. Nelson). The commercial granites of New England.

The specific subject of this book belongs to the Main Class 'Geology' but is less extensive than it. H and 55

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are, therefore, merely the first and the first two digits respectively of its Colon and Decimal Numbers. The translation of its name into class numbers *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

23 JOHNSON (Duncan S.) *etc.* The relation of plants to tide-levels.

The specific subject of this book belongs to the Main Class 'Botany' but is less extensive than it. J and 58 are, therefore, merely the first and the first two digits respectively of its Colon and Decimal Numbers. The translation of its name into class numbers *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

24 MENON (A. K.). Groundnut and its uses.

The specific subject of this book belongs to the Main Class 'Agriculture' but is less extensive than it. J and 63 are, therefore, merely the first and the first two digits respectively of its Colon and Decimal Numbers. The translation of its name into class numbers *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

25 DANIEL (Esther Paterson) *etc.* Vitamin content of foods: a summary of the chemistry of vitamins, units of measurement, quantitative aspects of human nutrition and occurrence in foods.

The specific subject of this book belongs to the class 'Human food', which is a division of 'Hygiene' and which in its turn belongs to the Main Class 'Medicine'. L and 61 are, therefore, merely the first and the first two digits respectively of its Colon and Decimal Numbers. The translation of its name into class number *i.e.* its classification is not yet complete and has, therefore, to be continued further with the aid of the rules of later chapters.

26 TULSIDAS [b. 1532]. Book of Ram: the bible of India, rendered into English by Hari Prasad Shastri.

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The specific subject of this book belongs to the Main Class 'Literature' but is less extensive than it. O and 8 are, therefore, merely the respective first digits of its Colon and Decimal Numbers. The translation of its name into class number *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

27 PALESTINE. COMMITTEE ON TRANSLITERATION OF ARABIC INTO ENGLISH. System of transliteration from Arabic into English.

The specific subject of this book belongs to the Main Class 'Linguistics' but is less extensive than it. P and 4 are, therefore, merely the respective first digits of its Colon and Decimal Numbers. The translation of its name into class number *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

28 LAO TZU. Tao te Ching tr. by Ch'u Ta-kao.

The specific subject of this book belongs to the Main Class 'Religion' but is less extensive than it. Q and 2 are, therefore, merely the respective first digits of its Colon and Decimal Numbers. The translation of its name into class number *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

29 FADDESON (Barend). Samkara's Gitabhashya toegelicht en beoordeeld etc.

The specific subject of this book belongs to the Main Class 'Philosophy' but is less extensive than it. R and 1 are, therefore, merely the respective first digits of its Colon and Decimal Numbers. The translation of its name into class number *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

30 WALLAS (Graham). Social judgment.

The specific subject of this book belongs to the Main Class 'Psychology' but is less extensive than it. S and 15 are, therefore, merely the first and the first two digits respectively of its Colon and Decimal Numbers. The

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translation of its name into class numbers *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

31 FLANAGAN (Sharman E.). Insurance and annuity plans for college staff [in the U.S.A.]. 1937.

The specific subject of this book belongs to the Main Class 'Education' but is less extensive than it. T and 37 are, therefore, merely the first and the first two digits respectively of its Colon and Decimal Numbers. The translation of its name into class numbers *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

32 LEAGUE OF NATIONS. ADVISORY AND TECHNICAL COMMITTEE FOR COMMUNICATION AND TRANSIT. Passport system: replies from governments to the enquiry on the application of the recommendations of the Passport Conference of 1926.

The specific subject of this book is the 'Law regulating the travel of aliens in different countries' and, therefore, belongs to the class 'Travel' which, in its turn belongs to the Main Class 'Geography'. U and 91 are, therefore, merely the first and the first two digits respectively of its Colon and Decimal Numbers. The translation of its name into class number *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

Note that this is really put under 'Political Science' in the Decimal Classification.

33 HOFFMANN (Walter Bailey). Pacific relations: the races and nations of the Pacific area and their problems etc. 1936.

The specific subject of this book belongs to the Main Class 'History' but is less extensive than it. V and 9 are, therefore, merely the respective first digits of its Colon and Decimal Numbers. The translation of its name into class number *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

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Note that this is really put under 'Political Science' in the Decimal Classification.

34 ASIRVATHAM (E.). Forces in modern politics : nationalism, imperialism and internationalism.

The specific subject of this book belongs to the Main Class 'Political science' but is less extensive than it. W and 32 are, therefore, merely the first and the first two digits respectively of its Colon and Decimal Numbers. The translation of its name into class number *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

35 BATSON (H. E.). Price policies of German public utility undertakings. 1933.

The specific subject of this book belongs to the Main Class 'Economics' but is less extensive than it. X and 33 are, therefore, merely the first and the first two digits respectively of its Colon and Decimal Numbers. The translation of its name into class number *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

36 HOLMES (S. J.). Negro's struggle for survival: a study in human ecology [in U.S.A.]. 1937.

The specific subject of this book belongs to the Main Class 'Social sciences' but is less extensive than it. Y and 3 are, therefore, merely the respective first digits of its Colon and Decimal Numbers. The translation of its name into class number *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

Note that this is really put in 'Political Science' in the Decimal Classification.

37 UNITED STATES. Treaty provisions defining neutral rights and duties, 1778-1936.

The specific subject of this book belongs to the Main Class 'Law' but is less extensive than it. Z and 34 are, therefore, merely the first and the first two digits respectively of its Colon and Decimal Numbers. The translation

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of its name into class numbers *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

38 COOMARASWAMY (Ananda K.). Elements of Buddhist iconography.

The specific subject of this book belongs to the Main Class 'Fine arts' but is less extensive than it. N and 7 are, therefore, merely the respective first digits of its Colon and Decimal Numbers. The translation of its name *i.e.* its classification is incomplete and has, therefore, to be continued with the aid of the rules of later chapters.

39 PURUCKER (G. de). Occult [English] glossary.

The specific subject of this book belongs to the Main Class 'Mysticism and spiritual experience' in the Colon Classification and 'Psychology' in the Decimal Classification and is in either case less extensive than the main class. Δ and 15 are, therefore, merely the respective first digits of its Colon and Decimal Numbers. The translation of its name *i.e.* its classification is not yet complete and has, therefore, to be continued with the aid of the rules of later chapters.

Exercise

For each of the books 40-78,

- A Find out the Main Class of the specific subject;
- B Translate the Main Class into (a) Colon Number and (b) Decimal Number; and
- C State whether the result in B completes the translation or not.

40 HOGGEN (Lancelot). Mathematics for the million: popular self-educator.

41 FITE (W. Benjamin). Advanced Calculus.

42 KNOTT (C. G.). Text-book of physics.

43 JONES (Arthur Taber). Sound.

44. MAGNUSSON (Earl Edward). Hydro-electric power in Washington. 1924.

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45 LEWIS (William C. Mac.). System of physical chemistry. 3 V.

46 MENON (A. K.). Manufacture of soap.

47 GATENBY (J. Bronte). Biological laboratory technique: an introduction to research in embryology, cytology and histology.

48 REEDS (Chester A.). The earth.

49 HECK (Nicholas Hunter). Earthquakes.

50 SABHESAN (M. S.). Intermediate botany.

51 TAYLOR (William Randolph). Marine algae of North America.

52 WRIGHTSON (John) *etc.* Agriculture, theoretical and practical, a text-book of mixed farming for large and small farmers and for agricultural students.

53 TRESSLER (Donald K.) *etc.* The freezing preservation of fruits, fruit juices and vegetables.

54 VON WISS (C.). Living creatures.

55 SNYDER (Emily Eveleth). Biology in the making. 1940.

56 HOAGLAND (Ralph) and SNIDER (George G.). Nutritive properties of certain animal and vegetable fats.

57 MURAO (Shizue). Fat metabolism in the silkworm.

58 RAMACHANDRAN (N. S.). Ragas of Carnatic music.

59 BROOK (J. H. E.). Dramatic purpose of Hamlet.

60 PALMER (L. R.). Introduction to modern linguistics.

61 PAGE (W. Sutton). An introduction to colloquial Bengali.

62 MURRY (John Middleton). Life of Jesus.

63 RUSSELL (Bertand). Problem of philosophy.

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64 **SANTHINATHA**. Critical examination of the philosophy of religion.

65 **DEXTER** (Emily S.) *etc.* Introduction to the fields of psychology.

66 **BOTT** (Helen M. M.). Personality development in young children.

67 **SAUCIER** (W. A.). Introduction to modern views of education.

68 **ABSENIAN** (Seth). Bilingualism and mental development: a study of the intelligence and the social background of bilingual children in New York City.

69 **KENDREW** (W. G.). Climate, a treatise on the principles of weather and climate.

70 **IRELAND** (Philip Willard). Iraq: a study in political development. 1937.

71 **JENKS** (Edward). The ship of state: the essentials of political science.

72 **VENKATARANGAYYA** (M.). Federalism in government.

73 **FAY** (Charles Ralph) *etc.* Elements of economics.

74 **EINZIG** (Paul). World finance, 1935-1937.

75 **FAIRCHILD** (Henry Pratt). General sociology.

76 **LEAGUE OF NATIONS. CHILD WELFARE INFORMATION CENTRE**. Summary of the legislative and administrative series of documents. [A bibliographical periodical, commenced publication in 1938.]

77. **JACKSON** (S.). A manual of international law.

78 **AMEER ALI** (Syed) *etc.* Law of evidence applicable to British India.

CHAPTER 22

CLASSES WITH MANY FACETS

221 The following eleven main classes admit of subdivision on the basis of **TWO OR MORE TRAINS OF CHARACTERISTICS** and the specific subjects belonging to them may, therefore, present an equal number of **FACETS**:

Colon No.	Main Class.	Decimal No.
E	Chemistry	54
F	Technology	66
Δ	Mysticism and Spiritual experience	
O	Literature	8
P	Linguistics	4
Q	Religion	2
S	Psychology	15
U	Geography	91
V	History	9
W	Political science	32
X	Economics	33, 38, 65

CHARACTERISTIC is a basic term and denotes a fundamental conception in classification. In popular words it may be described as the differentiating quality or attribute by means of which we recognise the divisions of a class. It may be helpful to a beginner to read the systematic account of this term given in the *Prolegomena to library classification* (Pp. 8-11).

The specific subjects belonging to a Main Class may be differentiated from one another on the basis of each one

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of the characteristics used to divide the Main Class. Let us illustrate:

Examples

79 SHEPHERD (J. W.). Qualitative determination of organic compounds.

The specific subject of this book belongs to the Main Class 'Chemistry'. This Main Class may be divided on the basis of two trains of characteristics: the chemical problem investigated or pursued and the chemical substance studied. The book is concerned with the pursuit of the problem 'Qualitative analysis' as applied to the substance called 'Organic compounds'. Its specific subject has, therefore, two facets: 'Qualitative analysis' as Problem Facet and 'Organic substance' as Substance Facet.

80 FIELD (Samuel) *etc.* Chemical colouring of metals and allied processes.

The specific subject of this book belongs to the Main Class 'Technology'. This Main Class may be divided on the basis of two trains of characteristics: the commodity or substance studied and the problem pursued. The book is concerned with the substance 'Metals' and pursues the problem of 'Colouring' them. Its specific subject has, therefore, two facets: 'Metals' as Substance Facet and 'Colouring' as Problem Facet.

81 ZACHARISSON (R. E.). Pronunciation of English vowels, 1400—1700.

The specific subject of this book belongs to the Main Class 'Linguistics'. This Main Class may be divided on the basis of four trains of characteristics: the language and its stage (like 'Old', 'Middle', 'Modern' *etc.*) studied, the linguistic problem (like 'Phonology', 'Morphology', 'Syntax' *etc.*) pursued and the element of language (like 'Phonemes', 'Words', 'Phrases', 'Clauses', 'Sentences' *etc.*) brought up for special consideration. The book in this example is concerned with the pursuit of the problem 'Phonology' as applied to the element 'Vowels' in the 'English' language.

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in its 'Modern stage,' which is usually taken to have been entered about 1500 A.D. Its specific subject has, therefore, four facets: 'English' as Language Facet; 'Modern' as Stage Facet; 'Phonology' as Problem Facet; and 'Vowels' as Element Facet.

82 BELL (Herman F.). Introduction to [Christian] theology.

The specific subject of this book belongs to the Main Class 'Religion'. This Main Class may be divided on the basis of two trains of characteristics: the religion studied and the religious problem pursued. The book is concerned with 'Christianity' and the problem pursued by it is the 'Theology' of that religion. Its specific subject has, therefore, two facets: 'Christianity' as Religion Facet and 'Theology' as Problem Facet.

83 BRIDGES (Katherine M. Benham). Social and emotional development of the pre-school child.

The specific subject of this book belongs to the Main Class 'Psychology' and this Main Class may be divided on the basis of two trains of characteristics: the type of human entity studied and the psychological problem pursued. The book studies 'Pre-school children' and the psychological problem pursued is 'Emotions'. Its specific subject has, therefore, two facets: 'Pre-school children' as Entity Facet and 'Emotions' as Problem Facet.

84 FAWCETT (C. B.). A political geography of Europe. 1933.

The specific subject of this book belongs to the Main Class 'Geography' and this Main Class may be divided on the basis of three trains of characteristics: the geographical problem pursued: the geographical area about which the problem is studied; and the period of time (Chronological factor) up to which the study is brought. The book in this example pursues 'Political geography' as its problem; this it applies to the Geographical area 'Europe'; It brings the study up to the 1930's which may be written for convenience as '193—'. The specific subject of the

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book has, therefore, three facets: 'Political geography' as Problem Facet; 'Europe' as Geographical Facet; and '193—' as Chronological Facet.

85 VONDRAČEK (Felix John). Foreign policy of Czechoslovakia, 1918-1935.

The specific subject of this book belongs to the Main Class 'History' and this Main Class can be classified on the basis of three trains of characteristics: the geographical area whose history is studied; the historical problem (like 'Political', 'Constitutional', 'Economic' etc.) pursued and the period of time (Chronological factor) up to which the study is brought. The specific subject of this book is concerned primarily with the geographical area 'Czechoslovakia'; the historical problem it pursues is 'Foreign policy'; and it brings the study up '193—'. The specific subject of the book has, therefore, three facets: 'Czechoslovakia', as Geographical Facet; 'Foreign policy' as Problem Facet; and '193—' as Chronological Facet.

86 DANTWALA (M. L.). Marketing of raw cotton in India. 1937.

The specific subject of this book belongs to the Main Class 'Economics' and this Main Class can be subdivided on the basis of four trains of characteristics: the business which forms the subject of study; the economic problem pursued; the geographical area falling within the purview of the study; and the period of time (Chronological factor). The book in this example is concerned with 'Cotton business'; the problem it pursues is 'Marketing'; the geographical area coming within its purview is 'India'; and the study is brought up to '193—'. The specific subject of the book has, therefore, four facets: 'Cotton business' as Business Facet; 'Marketing' as Economic Facet; 'India' as Geographical Facet; and '193—' as Chronological Facet.

87 SCHAYER (Stanislav). Mahayana doctrines of salvation tr. by R. T. Knight.

The specific subject of this book belongs to the Main Class 'Religion' and this Main Class can be subdivided on the basis of two trains of characteristics: the religion

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studied and the problem pursued. The book is concerned with the 'Mahayana' branch of Buddhism and explores the 'Doctrines of salvation' in this religion. The specific subject of the book has, therefore, two facets: 'Mahayana' as Religion Facet and 'Salvation' as Problem Facet.

Exercise

For each of the books 88—108.

- A. State how many facets the specific subject has;
- B. State what the facets are; and
- C. Indicate what words in the title belong to the respective facets.

88 TSEN (Zola Y.). Modified method of colorimetric determination of small quantity of phosphorous.

89 BULL (Henry B.). Biochemistry of lipids.

90 SCHÖN (Eduard). Die Bildung des Adjektivs im Altenglischen.

91 AKSHAYA KUMARI DEVI. Evolution of the Rigvedic pantheon.

92 MALLAYYA SASTRI (B.). Vivahattvam [Hindu sacrament of marriage].

93 MAHAMMUD (Saiyed). Tr. Selected Muhammadan traditions.

94 WENSINCK (A. J.). The Muslim creed.

95 MIRZA (Naderbag K.). Reincarnation and Islam.

96 KIMMENS (C. W.). Children's dreams.

97 GUTTERIDGE (M. V.). Duration of attention in young children.

98 ISAACS (Susan). Intellectual growth in young children with an appendix on "why" questions by Nathan Isaacs.

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99 IOVETZ-TERESHCHENK (N. M.). Friendship-love in adolescence.

100 BOORMAN (W. Ryland). Developing personality in [adolescent] boys.

101 RUTTER (W. P.). Commercial geography of the British isles.

102 CADAMOSTO (Alvise da). Voyages and other documents on Western Africa in the second half of the fifteenth century, tr. and ed. by C. R. Crone.

103 KEITH (Arthur Berriedale). British cabinet system, 1830—1938.

104 TAN YUN-SHAN. Modern Chinese history: political, economic and social. 1938.

105 DELANNEY (Louis). Highway administration and finance in fifteen countries. 1937.

106 HUSSAIN (S. A.). Agricultural marketing in Northern India. 1936.

107 GRAY (E. M.). Weaver's wage: earnings and collective bargaining in the Lancashire cotton weaving industry. 1937.

108. LEAGUE OF NATIONS. BUREAU OF THE CONFERENCE FOR THE REDUCTION AND LIMITATIONS OF ARMAMENTS. National control of the manufacture of and trade in arms: information as to present position collected by the secretariat in accordance with the resolution adopted on May 31, 1937, by the Bureau of the Conference.

222 The second and later steps in translation will be along different lines in the Colon and the Decimal Classifications.

Before taking up the rules that lay down the procedure for the further stages in the translation of the name of

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a specific subject into class number, it may be helpful to deal with a fundamental difference between the Colon and the Decimal Classifications in their relation to the facets of a specific subject. The Colon Classification explicitly mentions the different trains of characteristics on the basis of which Main Classes are to be classified. The chapter of rules bearing on each Main Class (*Colon classification*, Part 1.) begins by enumerating the trains of characteristics, with their names, the order in which they must be taken and so on. These details are summarised by a convenient formula given at the head of the schedules in the corresponding chapter of Part 2. In other words, the Colon Classification makes room for all the facets of a specific subject from the start and represents them in its final class number, even visually the facets being separated by colons.

The Decimal Classification, on the other hand, makes no explicit mention of the trains of characteristics, though they are implied in the schedules of divisions, subdivisions and sections. There is, however, one important difference: divisions based on different characteristics are all often given a co-ordinate base—they can not always be subordinated to one another and thus combined as in the Colon Classification. The result is that with many a specific subject, one of its facets has to be preferred for representation in the Decimal Number and the rest ignored: the Decimal Number for a many-faceted subject has to be one-faceted and it cannot, therefore, be co-extensive with the subject it translates. It is as if one were obliged, by poverty of language, to translate 'Rose' merely as 'Flower'.

Then there is the problem of choosing which facet is to be retained: this choice must often be arbitrary. No two libraries, then, may agree in it. One and the same library, even, may find it difficult to be consistent in such forced preferences. This awkward situation has made necessary

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guides like Merrill's *Code for classifiers: principles governing the consistent placing of books in a system of classification*. Such a book can, obviously, not anticipate and exhaust all cases; it can only serve as a general model after which each library must work out and codify its own particular decisions.

This impossibility, in the Decimal Classification, of representing all facets of every subject and so making its class number co-extensive, has hidden from view the fact that classification is a question of translation. The conception of a classificatory language has been missed and, when mooted, is even blindly resisted. This fundamental defect in the Decimal Classification—the pioneer scheme that made classification popular and pass for an unquestioned necessity—has blocked further development of the technique of classification. The situation recalls to mind the belief that a certain reptile devours its eggs as they are laid thus making propagation of species precarious.

The bright new trail blazed by the genius of Dewey has been thinned and finally lost in the waste. The sincerest tribute the library profession can offer its doyen is to re-direct it into more fruitful lands. One step in this direction is to provide that all the facets of a subject be represented in its class number and this is what the Colon Classification seeks to do by means of its Colon Device. We need no longer translate 'Rose' grossly by 'Flower'! We can even find a distinctive term in classificatory language for every strain and variety of roses. We are on the way to finding a co-extensive class number for any subject, whatever be its facets. And the urge to make our translation from current to classificatory language perfectly exact without loss of any of the features enumerated in the first chapter leads us incidentally to make continuous improvements in the technique of classification and its designing. What was static becomes dynamic; what

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tended to become a dead language becomes a virile living one; and Ever-Becoming, which is a vital attribute of life, begins to characterise the art and science of classification.

This essential difference between the Colon and the Decimal Classifications will declare itself in the examples worked out in the rest of the book.

222C As the second and subsequent steps in translating into Colon Number a specific subject belonging to one of the main classes enumerated in rule 221, less extensive than its main class and having all the facets indicated by the formula of characteristics of its main class, proceed as follows:

- (0) Write down the NAME of the SPECIFIC SUBJECT.
- (1) Write down the DIGIT of the Main Class to which the specific subject belongs.
- (2) Write down the FORMULA OF CHARACTERISTICS found at the head of the chapter devoted to the Main Class in 'Part 2 Schedules of Classification'.
- (3) With the aid of the rules in the corresponding chapter of 'Part 1 Rules of Classification' re-write the formula with the symbols in the formula duly expanded. Let us call this the EXPANDED FORMULA.

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- (4) Distribute the words in the name of the specific subject into appropriate brackets. Let us call this the PARTICULAR EXPRESSION OF THE FORMULA.
- (5) Referring to the rules whenever necessary, translate the words within the brackets into the STANDARD TERMS given in the schedules of Part 2, omitting all connecting words and puffs, and supplying, with the aid of the canon of context, the words, if any, required to make the contents of a bracket intelligible.
- (6) With the aid of the schedules, translate the words within brackets into NUMBERS and remove the brackets. The result is the CLASS NUMBER (Colon Number).

To verify if the class number obtained is a CORRECT TRANSITION of the specific subject, proceed further as follows:
- (7) ANALYSE the class number into its constituent FACETS and give them the name shown in the rules of classification.
- (8) With the aid of the appropriate schedules of classification, give a DIGIT BY DIGIT INTERPRETATION of the class number.

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Examples

In each example, the result at each of the nine stages of procedure is shown.

79 SHEPHERD (J. W.). Qualitative examination of organic compounds.

- (0) Qualitative examination of organic compounds.
- (1) E
- (2) E [P] : [S]
- (3) E [Problem number] : [Substance number]
- (4) E [Qualitative examination] : [of organic compounds].
- (5) E [Qualitative analysis] : [Organic substances]
- (6) E 33.5
- (7) E is the Main Class Number
 33 is the Problem Number
 : indicates change of characteristic or facet
 5 is the Substance Number
- (8) E = Chemistry
 E3 = Analysis
 E33 = Qualitative analysis
 E33.5 = Qualitative analysis of organic substances.

which is virtually equivalent to the specific subject of the book.

Note that the translation in English given on the right hand side must be elegant and in conformity with the syntax and usage of that language.

80 FIELD (Samuel), *etc.* Chemical colouring of metals and allied processes.

- (0) Chemical colouring of metals and allied processes.
- (1) F
- (2) F [S] : [P]

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- (3) F [Substance number] : [Problem (or Process) number]
- (4) F [of metals] : [Chemical colouring and allied processes]
- (5) F [Metals] : [Colouring]
- (6) F191:95
- (7) F is the Main Class Number
191 is the Substance Number
: indicates change of characteristic or facet
95 is the Problem Number
- (8) F = Technology
F1 = Technology of inorganic substances
F191 = Metallurgy
F191:95 = Colouring of metals

which is virtually equivalent to the specific subject of the book.

81 ZACHRISSON (R. E.). Pronunciation of English vowels, 1400-1700.

- (0) Pronunciation of English vowels, 1400—1700.
- (1) P
- (2) P [L] : [S] [P] : [E]
- (3) P [Language number] : [Stage number] [Problem number] : [Element number]
- (4) P [English] : [1400—1700] [Pronunciation] : [of vowels]
- (5) P [English] : [Modern] [Phonology] : [Vowels]
- (6) P111·J1:11
- (7) P is the Main Class Number
111 is the Language Number
· indicates change of characteristic or facet
J is Stage Number

No colon, though there is change of characteristic or facet, as the facet on the left is designed to have always the same number of digits *viz.* one

CLASSES WITH MANY FACETS

- 1 is the Problem Number
- : indicates change of characteristic or facet
- 11 is the Element Number.
- (8) P = Linguistics
 - P1 = „ of Indo-Germanic
 - P11 = „ of Teutonic
 - P111 = „ of English
 - P111:J = „ of Modern English
 - P111:J1 = Modern English phonology
 - P111:J1:1 = Phonology of modern English phonemes
 - P111:J1:11 = Phonology of modern English vowels

which is virtually equivalent to the specific subject of the book.

82 BELL (Herman F.). Introduction to Christian theology.

- (0) Introduction to Christian theology
- (1) Q
- (2) Q [R] : [P]
- (3) Q [Religion number] : [Problem number]
- (4) Q [Christian] : [Introduction to theology]
- (5) Q [Christianity] : [Theology]
- (6) Q6:3
- (7) Q is the Main Class Number
 - 6 is the Religion Number
 - : indicates change of characteristic or facet.
 - 3 is the Problem Number
- (8) Q = Religion
 - Q6 = Christianity
 - Q6:3 = Christian theology

which is virtually equivalent to the specific subject of the book.

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83 BRIDGES (Katherine M. Benham). Social and emotional development of the pre-school child.

- (0) Social and emotional development of the pre-school child.
- (1) S
- (2) S [E] : [P]
- (3) S [Entity number] : [Problem Number]
- (4) S [of the pre-school child] : [Social and emotional development]
- (5) S [Infant] : [Feeling, emotion, affection]
- (6) S13:5
- (7) S is the Main Class Number
13 is the Entity Number
: indicates change of characteristic or facet
5 is the Problem Number -
- (8) S = Psychology
S1 = „ of the child
S13 = „ of the infant
S13:5 = Feeling, emotion and affection of the infant

which is virtually equivalent to the specific subject of the book.

84 FAWCETT (C. B.). A political geography of Europe. 1933.

- (0) Political geography of Europe. 1933.
- (1) U
- (2) U [P] : [G] : [C]
- (3) U [Problem number] : [Geographical number] : [Chronological number]
- (4) U [Political geography] : [of Europe] : [1933]
- (5) U [Political geography] : [Europe] : [193—]
- (6) U5:5:N3
- (7) U is the Main Class Number

CLASSES WITH MANY FACETS

- 5 is the Problem Number
 : indicates change of characteristic or facet
 5 is the Geographical Number
 : indicates change of characteristic or facet
 N3 is the Chronological number
 (8) U = Geography
 U5 = Political geography
 U5:5 = „ of Europe
 U5:5:N = „ „ brought up to 1900's
 U5:5:N3 = „ „ brought up to 1930's

which is virtually equivalent to the specific subject of the book.

85 VONDRACEK (Felix John). Foreign policy of Czechoslovakia, 1918—1935.

- (0) *Foreign policy of Czechoslovakia, 1918—1935.
 (1) V :
 (2) V [G] : [P] : [C]
 (3) V [Geographical number] : [Problem number] : [Chronological number]
 (4) V [of Czechoslovakia] : [Foreign policy] : [1918—1935]
 (5) [Czechoslovakia] : [Foreign policy] : [193—]
 (6) V5925:19:N3
 (7) V is the Main Class Number
 5925 is the Geographical Number
 : indicates change of characteristic or facet
 19 is the Problem Number
 : indicates change of characteristic or facet
 N3 is the Chronological Number

FACET-ANALYSIS

- (8) V = History
 V5 = History of Europe
 V592 = „ Balkan States
 V5925 = „ Czechoslovakia
 V5925:1 = General history of Czechoslovakia
 V5925:19 - = Foreign policy of Czechoslovakia
 V5925:19:N = Foreign policy of Czechoslovakia brought up to 1900's
 V5925:19:N3 = Foreign policy of Czechoslovakia brought up to 1930's.

which is virtually equivalent to the specific subject of the book.

86 DANTWALA (M. L.) Marketing of raw cotton in India. 1937.

- (0) Marketing of raw cotton in India up to 1937.
 (1) X
 (2) X [B] : [E] : [G] : [C]
 (3) X [Business number] : [Economic number] :
 [Geographical number] : [Chronological number]
 (4) X [of raw cotton] : [Marketing] : [in India] :
 [up to 1937]
 (5) X [Raw cotton industry] : [Marketing] :
 [India] : [193—]
 (6) X9J771:51:2:N3
 (7) X is the Main Class Number
 9J771 is the Business Number
 : indicates change of characteristic or facet
 51 is the Economic Number
 : indicates change of characteristic or facet
 2 is the Geographical Number
 : indicates change of characteristic or facet
 N3 is the Chronological Number

CLASSES WITH MANY FACETS

- (8) X = Economics
- X9 = Industries
- X9J = Agricultural business
- X9J7 = Business in fibrous plants
- X9J77 = Business in plants with fibrous fruits
- X9J771 = Business in raw cotton
- X9J771:5 = Commerce in raw cotton
- X9J771:51 = Marketing of raw cotton
- X9J771:51:2 = Marketing of raw cotton in India
- X9J771:51:2:N = Marketing of raw cotton in India till 1900's
- X9J771:51:2:N3 = Marketing of raw cotton in India till 1930's.

which is virtually equivalent to the specific subject of the book.

87. SCHAYER (Stanislav). *Mahayana doctrines of salvation* tr. by R. T. Knight.

- (0) Mahayana doctrines of salvation
- (2) Q
- (3) Q [R] : [P]
- (4) Q [Religion number] : [Problem number]
- (5) Q [Mahayana] : [Doctrines of salvation]
- (6) Q42:35
- (7) Q is the Main Class Number
- 42 is the Religion Number
- : indicates change of characteristic or facet
- 35 is the Problem Number
- (8) Q = Religion
- Q4 = Buddhism
- Q42 = Mahayana
- Q42:3 = Mahayana theology
- Q42:35 = Salvation according to Mahayana

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which is virtually equivalent to the specific subject of the book.

Exercise

For each of the books 88—108,

- A. Translate the specific subject into Colon Number
- B. Show the result at each stage of procedure

222D As the Second and further steps in translating into Decimal Number any specific subject less extensive than its main class, proceed as follows choosing the digit at each stage by the method of trial and error and looking up the index in case of difficulty.

- (0) Write down the name of the specific subject grouping and displaying the words in it according to the facets to which they belong.
- (1) Write down the FIRST DIGIT as furnished by the FIRST SUMMARY.
- (2) Write down the SECOND DIGIT as furnished by the SECOND SUMMARY.
- (3) Write down the THIRD DIGIT as furnished by the THIRD SUMMARY.
- (4) Write down a dot as the FOURTH DIGIT if step (5) is necessary.
- (5) Write down the REST OF THE DIGITS as furnished by the COMPLETE TABLES, following the instruction given, if any, under the class number concerned.

CLASSES WITH MANY FACETS

- (6) Proceed as follows at stages (2), (3) and (5) if the situation warrants it:
 - (a) See if all the digits of the same order in the schedule relate to a single facet or to more.
 - (b) If the latter, look up instructions, if any, in the Complete Tables, the *Code for classifiers* and the record of the decision of the library as to which of the facets is to be preferred and which ignored and follow the instructions given, if any.
 - (c) If no instruction is found, make a fresh decision and record it for future guidance.
 - (d) State by the omission of what facets co-extensiveness has not been reached.
- (7) ANALYSE the class number into its constituent facets and name them.
- (8) Give a digit by digit interpretation of the class number and state to what part of the name of the specific subject it is virtually equivalent and what parts go untranslated.

Examples

In each example, the result at each of the nine stages is shown.

FACET-ANALYSIS

79 SHEPHERD (J. W.). Qualitative examination of organic compounds.

(0) Qualitative analysis [Problem facet] of organic compounds [Substance facet]

(1) 5 (2) 54

(3) Divisions 1—5 and 8 of 54 belong to the Problem Facet, while 6, 7 and 9 belong to the Substance Facet. But 543 is divided on the basis of substance characteristic. And the note under it directs us to choose it. We therefore have 543.

(4) 543.

(5) 543.8

(6) Co-extensiveness is not reached as the Problem Facet is not fully represented.

(7) 543.8 is the Main Class Number

3 is the Problem Number

54 is the Substance Number

(8) 5 = Pure science

54 = Chemistry

543 = Analysis

543.8 = Analysis of organic products

which is virtually equivalent to half the name of the specific subject of the book and ignores in it the words "Qualitative".

There is no escaping the fact that this book which develops special techniques to deal with qualitative analysis will be lost among general books on organic analysis

80 FIELD (Samuel), *etc.* Chemical colouring of metals and allied processes.

(0) Chemical colouring and allied processes [Problem facet] of Metals [Substance facet]

(1) 6 (2) 66 (3) 669 Stages (4) and (5) do not arise.

(6) Co-extensiveness is not reached as there is no provision in the scheme for representing the problem facet which has, therefore, to be forcedly ignored.

CLASSES WITH MANY FACETS

- (7) 66 is the Main Class Number
9 is the Substance Number
- (8) 6 = Useful arts
66 = Chemical technology
669 = Metallurgy

which is virtually equivalent to the part of the name of the specific subject of the book got by ignoring the words 'Chemical colouring and other allied processes'.

81 ZACHRISSON (R. E.). Pronunciation of English vowels, 1400—1700.

- (0) Pronunciation [Problem facet] of English [Language facet] vowels (Element facet), 1400—1700 [Stage facet]
- (1) 4 (2) 42 (3) 421 (4) 421.
- (5) Divisions 1—3 of 421 belong to the Element Facet and 4—5 to the Problem Facet. It is, therefore, necessary to ignore one of these facets and prefer the other. There is no indication in the Complete Tables as to how the choice should be exercised. Nor is any direction to be found in the *Code for classifiers*. We make a decision now to ignore the Element Facet in such cases. The number we get is, then, 421.5
- (6) Co-extensiveness is not reached as the Element Facet has been ignored
- (7) 4 is the Main Class Number
2 is the combined Language and Stage Number
1.5 is the Problem Number
- (8) 4 = Philology
42 = Philology of modern English
421 = Orthography of modern English
421.5 = Orthocopy of modern English

which is virtually equivalent to the part of the name of the specific subject of the book got by ignoring the words 'Vowels'.

FACET-ANALYSIS

82 BELL (Herman F.). Introduction to Christian theology.

- (0) Christian [Religion facet] theology [Problem facet]
- (1) 2 (2) 23 Stages (3), (4) and (5) do not arise
- (6) Co-extensiveness has been reached as it is implied in this scheme that divisions 22 to 28 belong to 'Christianity' of the Religion Facet
- (7) 2 is the Main Class Number
3 is the combined Religion and Problem Number
- (8) 2 = Religion
23 = Theology in Christianity ,

which is virtually equivalent to the specific subject of the book.

83. BRIDGES (Katherine M. Benham). Social and emotional development of the pre-school child.

- (0) Emotions *etc.* [Problem facet] of the Pre-school child [Entity facet]
- (1) 1 (2) 15 (3) and (4) 159.9
- (5) A choice of facet has to be made at this stage. 159.9227 is 'Child psychology'. If we follow the note under 159.92272, we shall get 159.9227242 for 'Emotions of childhood'. But if we ignore it and go further down the schedule we get 159.92273632 for 'Psychology of age 3—5 (pre-school child)'. We have to prefer one and reject the other. We prefer to make the Entity Facet to reach co-extensiveness and ignore the Problem Facet. Thus the number is 159.92273632
- (6) Co-extensiveness is not reached as the 'Problem Facet' is not fully represented.
- (7) 15 is the Main Class Number
9.922 is the Problem Number
73632 is the Entity Number

CLASSES WITH MANY FACETS

- (8) 1 = Philosophy
- 15 = Psychology
- 159.92 = Mental development and capacity
- 159.922 = Mental characteristics
- 159.9227 = Child psychology
- 159.92273 = Mental characteristics of children
- 159.922736 = Mental characteristics in nascent periods
- 159.9227363 = Mental characteristics in childhood
- 159.92273632 = Mental characteristics in the period (3—5).

84 FAWCETT (C. B.). A political geography of Europe. 933.

- (0) A political geography [Problem facet] of Europe [Geographical facet] [brought upto 1933—Chronological facet]
- (1) 9 (2) 91 (3) 911 (4) 911.
- (5) 911.4. The Chronological facet has to be ignored as there is no provision for it in the scheme.
- (6) Co-extensiveness has not been reached as the Chronological facet has been ignored
- (7) 91 is the Main Class Number
- 1 is the Problem Number
- 4 is the Geographical Number
- (8) 9 = History
- 91 = Geography
- 911 = Political geography
- 911.4 = " " of Europe.

which is virtually equivalent to that part of the name of the specific subject of the book got by ignoring "brought up to 1933".

FACET-ANALYSIS

338	= Production
338.1	= Agricultural products
338.17	= Special products
338.173	= Field crop products
338.1735	= Textile fibre products
338.17351	= Cotton
338.1735109	= Local treatment of cotton
338.17351095	= Cotton in Asia
338.173510954	= Cotton in India

which is virtually equivalent to the specific subject of the book omitting the word 'Marketing' and the Chronological Facet.

87 SCHAYER (Stanislav). Mahayana doctrines of salvation tr. by R. T. Knight.

- (0) Mahayana [Religious facet] doctrines of salvation [Problem phase]
- (1) 2 (2) 29 (3) 294 (4) 294.
- (5) 294.32
- (6) Co-extensiveness is not reached as there is no provision for problem facet for any religion other than Christianity
- (7) 2 is the Main Class Number
94.32 is the Religion Number
- (8) 2 = Religion
29 = Non-Christian religions
294 = Brahmanism and Buddhism
294.3 = Buddhism
294.32 = Buddhism of the North

which is virtually equivalent to the name of the specific subject of the book got by omitting "Doctrines of salvation".

Exercise

For each of the books 88—108,

- A. Translate the specific subject into Decimal Number.
- B. State the result at each stage of procedure.

CHAPTER 23

ELLIPTICAL TITLES

231 If the title of a book is ELLIPTICAL as regards any facet of its main class, but the ellipsis is remedied by what the title implies, to derive the specific subject in its full form add the words implied. It may be sufficient to do this at stage 4 of the procedure laid down for the Colon Classification, but at the very beginning *i.e.* at stage 0 for the Decimal Classification. Enclose the word so added within inverted commas. In geography, history and economics the chronological facet may have often to be filled up with the aid of the date of publication of the book as it may be presumed that the book is brought up to that time unless the contrary is stated.

Examples

109 HUNTER (Andrew). Creatine and creatinine.

This is a book on chemistry. The substance studied, which alone the title mentions, is a biosubstance and it implies that the problem division appropriate to the book is 'Biochemistry'.

Colon Number

The results at stages 4, 5 and 6 are as follows:

(4) E ["Biochemistry"] : [Creatine and creatinine]

(5) E [Biochemistry] : [Creatine and creatinine]

(6) E 7:993

FACET-ANALYSIS

Decimal Number

Biochemistry⁴ is a new development which has not yet found a proper place in the Decimal Classification. The index mentions 574.19. But we find subdivisions worked out under 581.19 for biosubstances of vegetable origin and 591.19 is evidently intended for biosubstances of animal origin, though it is not subdivided. Now creatine is an organic base found in human flesh. And so we have to turn to 612.015. But a note under 612.0152 directs us again to 612.396 to 612.398. A search in that region gives 612.39723. Thus the results at stages (0), (5) and (6) are—

- (0) “Physiological chemistry” [Problem Facet] of creatine and creatinine [Substance Facet]
- (5) 612.39723
- (6) Co-extensiveness is not reached as the Substance Facet cannot be fully represented.

110 Hugo (Victor). *Les misérables*.

This is a well-known novel by Victor Hugo. Although the title consists only of a single word, it implies that the language of the literature is ‘French’, its form is ‘Fiction’ and that its author is ‘Hugo’.

Colon Number

The results at stages (2), (4), (5) and (6) are as follows:

- (2) O [L]: [F][A]: [W]
- (4) O [“French”]: [“Fiction”] [“Hugo”]: [Les misérables]
- (5) O [French]: [Fiction] [1802]: [Fourth work]
- (6) O122.3M02.4

Rules 7301 and 7401 of the *Colon classification* should be read to understand how ‘Hugo’ becomes ‘1802’ and ‘Les misérables’ becomes ‘Fourth work’ when the terms in the title of the book are rendered into the standard terms of the Colon schedules.

ELLIPTICAL TITLES

Decimal Number

The results at stages (0), (5) and (6) are as follows:

- (0) Les misérables, "a French" [Language Facet]
"novel" [Form Facet] by "Hugo"
[Author Facet]

(5) 843.78

(6) Co-extensiveness is not reached as there is no provision to represent the Work Facet.

Note that translating 'Les misérables' into 843.78 (=Hugo) is like naming the 'Rose' merely 'Flower' on account of *poverty* of language.

111 SINGH (Iqbal) Gautama Buddha.

The title, which indicates the 'life of Buddha' and so belongs to the Problem Facet, implies that 'Buddhism' is the Religion Facet.

Colon Number

The results at stages (4), (5) and (6) are as follows:

(4) Q ["Buddhism"]: [Gautama Buddha]

(5) Q [Buddhism]: [Founder of religion]

(6) Q4:33

Decimal Number

The results at stages (0), (5) and (6) are as follows:

(0) Gautama Buddha [Problem Facet] in "Buddhism" [Religion Facet]

(5) 294.3

(6) Co-extensiveness is not reached as there is no provision to represent the Problem Facet.

Note that translating 'Gautama Buddha' into 294.3 [=Buddhism] is like naming 'Rose' merely 'Flower' on account of *poverty* of language.

112 WILLIAMS (Basil). Whig supremacy, 1714—1760.

Though the title explicitly furnishes information only about the Chronological Facet of the book which belongs to the Main Class 'History', 'Great Britain' and 'General political history' are implied as belonging to the Geographical and Problems Facets respectively.

FACET-ANALYSIS

Colon Number

The results at stages (2), (4), (5) and (6) are as follows:

(2) V [G]: [P]: [C]

(4) V ["Great Britain": ["Political and general"]]: [Whig supremacy, 1714—1760]

(5) V [Great Britain]: [Political and general]: [176—]

(6) V3:1:L6

Decimal Number

The results at stages (0), (5) and (6) are as follows:

(0) "General history" [Problem Facet] "of Great Britain" [Geographical Facet] during Whig supremacy, 1714—1760 [Chronological Facet]

(5) 942.072

(6) Co-extensiveness is reached

113 SIEGFRIED (Andre). Canada tr. ... by H. H. Hemming and Doris Hemming. 1937.

The title which mentions only the Geographical Facet evidently implies that the Problem Facet is "General and political history". The date of publication may be reasonably presumed to imply that the Chronological Facet is '1930's'.

Colon Number

The results at stages (2), (4), (5) and (6) are as follows:

(2) V [G]: [P]: [C]

(4) V [Canada]: ["General and political"]]: ["193—"]

(5) V [Canada]: [General and political]: [193—]

(6) V72:1:N3

Decimal Number

The results at stages (0), (5) and (6) are as follows:

(0) "General and political history" [Problem Facet] of Canada [Geographical Facet] "brought upto 1930's" [Chronological Facet]

ELLIPTICAL TITLES

(5) 971.05

(6) The schedule is incomplete; there is evidence that it is the intention to add one more digit. Subject to this, co-extensiveness has been reached.

114 INDIAN TARIFF BOARD. Report regarding the grant of protection to the magnesium chloride industry. 1938.

The title mentions only the Business Facet and the Economic Facet of this book which belongs to the Main Class 'Economics' in the Colon Classification. The heading suggests that the Geographical Facet has 'India' and the date of publication leads us to the reasonable presumption that the Chronological Facet is '1930's'.

Colon Number

The results at stages (2), (4), (5) and (6) are as follows:

(2) X [B] : [E] : [G] : [C]

(4) X [to the magnesium chloride industry] :
[Report regarding the grant of protection] :
[" India "] : [" 193— "]

(5) X [Magnesium chloride industry] : [Protection] : [India] : [193—]

(6) X9F42171:531:2:N3

Decimal Number

The results at stages (0), (5) and (6) are as follows:

(0) Protection [Economic Facet] to magnesium chloride industry [Business Facet] "in India" [Geographical Facet] "during the 1930's" [Chronological Facet]

(5) 337.566140954

(6) Co-extensiveness is not reached because (i) there is no provision for the representation of 'Magnesium chloride' (we can go only up to 'salts') and (ii) the Chronological Facet has to be omitted.

Note that the Geographical Facet is got by the use of Common subdivision.

FACET-ANALYSIS

Exercise

1 For each of the titles 109—114, give the results at the remaining stages of procedure.

2 For each of the titles 115—147

A. Fill up the ellipsis.

B. Translate the specific subject thus got into Colon Number showing the results at all the nine stages of procedure.

C. Translate the specific subject thus got into Decimal Number showing the results at all the nine stages of procedure.

115 BOMSKOV (Christian). *Methodik der Vitaminforschung.*

116 WILLSTATTER (Richard), *etc.* *Investigations of chlorophyll.*

117 TAUBER (Henry). *Enzyme chemistry.*

118 UNDSSET (Sigirid). *Faithful wife.*

119 DANTE (Alighieri). *Divine comedy.*

120 BALZAC (Honore de), *etc.* *Last illusions.*

121 ARTZBASHEF (Michael). *War, a play in four acts,* tr. by Percy Pinkerton *etc.*

122 KALIDASA. *Nalodaya.*

123 KALIDASA. *Sakuntala.*

124 BHAVBHUTI. *Malatimadhavam.*

125 DANDIN. *Dasakumara charita.*

126 OMAR KHAYYAM. *Rubaiyyat.*

127 MATHERS (Powys). *Tr. Book of the thousand nights and one night.*

ELLIPTICAL TITLES

- 128 RAGHAVA AYYANGAR (R.). *Pari katai* [this is the first work of this Tamil poet who was born in 1881].
- 129 COOK (F. C.). *Ed.* Holy bible according to the authorised version. New Testament.
- 130 CHINNASWAMI SASTRI (A.). *etc. Eds.* Catapatha Brahmana.
- 131 RAGHUVIRA. *Ed.* Jaiminiya Brahmana.
- 132 NATESA SASTRI (K.). *Tr.* Srimad Bhagavatam.
- 133 VISVANATH SASTRI (S.). *Ed.* Lalitopakhyanam.
- 134 VAIDYA (P. L.). *Tr.* Dhammapada.
- 135 BHAGWAT (N. K.). *Ed.* Therigatha.
- 136 EPSTEIN (Isidore). *Ed.* Babylonian Talmud : Seder Mo'ed.
- 137 SARWAR (Hafiz Ghulam). *Tr.* Holy Qur-an.
- 138 MERZHIKOVSKY (Dmitri). Jesus manifest tr. by Edward Gallibrand.
- 139 CROW (Carl). Master kung: the story of Confucius.
- 140 EDIB (Halide). Inside India. 1937.
- 141 JACKSON (A. V. Williams). Persia, past and present: a book of travel and research etc. 1909.
- 142 WOODWARD (E. L.). Age of reform, 1815—1870.
- 143 BLACK (J. B.). Reign of Elizabeth, 1558—1603.
- 144 JEFFRIES (J. M. N.). Palestine, the reality. 1939.
- 145 MAGNUSSON (Carl Edward). Electric power markets in Washington. 1937.
- 146 GHOSH (Bidhu Bhushan). Problem of agricultural credit in India. 1937.

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147 INDIAN TARIFF BOARD. Report on the grant of protection to the paper and paper pulp industries. 1938.

232 If the title of a book contains a DERIVED COMPOSITE TERM which covers two or three facets, render it in terms of FUNDAMENTAL CONSTITUENT TERMS which can be distributed to appropriate facets. It may be sufficient to do this at stage 4 of the procedure laid down for the Colon Classification but at the very beginning *i.e.* at stage 0 for the Decimal Classification. Enclose the words so distributed within inverted commas.

Derived composite terms occur frequently in the titles of medical books, particularly in those that deal with the several diseases of various organs. Such a title should be rendered in terms of the names of the organ and the disease concerned with the aid of a dictionary.

Examples

148 Anaemia should be rendered as [Blood] : [Atrophy]

149 Arteriosclerosis = [Arteries] : [Atrophy]

150 Aneurism = [Arteries] : [Abnormality in size]

151 Hodgkin's disease = [Lymphatic glands] : [Hypertrophy]

152 Asthma = [Bronchi] : [Complicated functioning]

153 Pleurisy = [Pleura] : [Inflammation]

154 Empyema = [Pleura] : [Due to presence of fluid]

155 Jaundice = [Liver] : [Complicated functioning]

156 Diabetes = [Pancreas] : [Metabolistic disorder]

ELLIPTICAL TITLES

157 Constipation = [Intestines] : [Underfunctioning]

158 Obstetrics = [Female genital organs] ∴ [Special physiology]

159 Gynæcology=[Female genital organs]: [Diseases]

Such cases of derived composite terms occur also in subjects like 'Agriculture' 'Animal husbandry', 'Technology' and several of the 'Useful arts'. Examples from such subjects will occur in later chapters.

233 Though it belongs to a single facet only, a DERIVED COMPOSITE TERM will have to be rendered in terms of its FUNDAMENTAL CONSTITUENT TERMS at stage 5 of the procedure for Colon Classification when it is rendered into the standard terms used in the schedule and at stage 0 for Decimal Classification.

Occasions for applying this rule may arise in Chemistry, Technology, Geology and other subjects in which a substance is known by a popular or trade name which does not disclose its composition. They may also occur in Economics. e.g. Socialism, Social credit etc.

Examples

The results are shown only at some of the stages of procedure.

160 PARTINGTON (J. R.). Composition of water.

The schedule of divisions based on the train of substance characteristic does not list 'Water' because it is a derived composite term. It can be found out from the book itself that 'Water' is 'Basic oxide of hydrogen'.

Colon Number

(2) E [P] : [S]

(4) E [Composition] : [Water]

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147 INDIAN TARIFF BOARD. Report on the grant of protection to the paper and paper pulp industries. 1938.

232 If the title of a book contains a DERIVED COMPOSITE TERM which covers two or three facets, render it in terms of FUNDAMENTAL CONSTITUENT TERMS which can be distributed to appropriate facets. It may be sufficient to do this at stage 4 of the procedure laid down for the Colon Classification but at the very beginning *i.e.* at stage 0 for the Decimal Classification. Enclose the words so distributed within inverted commas.

Derived composite terms occur frequently in the titles of medical books, particularly in those that deal with the several diseases of various organs. Such a title should be rendered in terms of the names of the organ and the disease concerned with the aid of a dictionary.

Examples

148 Anaemia should be rendered as [Blood] : [Atrophy]

149 Arteriosclerosis = [Arteries] : [Atrophy]

150 Aneurism = [Arteries] : [Abnormality in size]

151 Hodgkin's disease = [Lymphatic glands] : [Hypertrophy]

152 Asthma = [Bronchi] : [Complicated functioning]

153 Pleurisy = [Pleura] : [Inflammation]

154 Empyema = [Pleura] : [Due to presence of fluid]

155 Jaundice = [Liver] : [Complicated functioning]

156 Diabetes = [Pancreas] : [Metabolistic disorder]

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157 Constipation = [Intestines] : [Underfunctioning]

158 Obstetrics = [Female genital organs] : [Special physiology]

159 Gynæcology = [Female genital organs] : [Diseases]

Such cases of derived composite terms occur also in subjects like 'Agriculture', 'Animal husbandry', 'Technology' and several of the 'Useful arts'. Examples from such subjects will occur in later chapters.

233 Though it belongs to a single facet only, a DERIVED COMPOSITE TERM will have to be rendered in terms of its FUNDAMENTAL CONSTITUENT TERMS at stage 5 of the procedure for Colon Classification when it is rendered into the standard terms used in the schedule and at stage 0 for Decimal Classification.

Occasions for applying this rule may arise in Chemistry, Technology, Geology and other subjects in which a substance is known by a popular or trade name which does not disclose its composition. They may also occur in Economics. e.g. Socialism, Social credit etc.

Examples

The results are shown only at some of the stages of procedure.

160 PARTINGTON (J. R.). Composition of water.

The schedule of divisions based on the train of substance characteristic does not list 'Water' because it is a derived composite term. It can be found out from the book itself that 'Water' is 'Basic oxide of hydrogen'.

Colon Number

(2) E [P] : [S]

(4) E [Composition] : [Water]

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(5) E [General]: [Basic oxide of hydrogen]

(6) E1:210

Decimal Number

(5) 546.11

(6) Co-extensiveness is not reached since the Substance Facet represents only 'Hydrogen',

Note that 'Water' is not mentioned in the Complete Tables but that the Index alone gives it the above number. Even this help of the index is found only in the 14 edition of 1942. Till then there was no provision for water!

161 MAYOW (John). Untersuchungen über den Saltpetre.

Colon Number

(4) E ["General"]: [Saltpetre]

(5) E [(General): |Salt of potassium and nitrogen]

(6) E1:4121501

Note. Read rule E2202 of Part 1 of the *Colon classification* in constructing the Full Element Number by the addition of the Valency Number.

Decimal Number

(5) 549.72

(6) Co-extensiveness is not reached as this number stands for all "Phosphates, Arsenates, Vanadates Antimonates and Nitrates"

Poverty of language cannot go further!

162 DANCKWORTT (P. W.). Determination of degree of fineness of X-ray 'Contrast substances'.

Colon Number

(4) E [Determination of degree of fineness]: [of X-ray 'contrast substance']

(5) E [Analysis]: [Salt of barium and sulphur]

(6) E3:4262616

Decimal Number

(5) 549.75

(6) Co-extensiveness is not reached as the number stands for sulphates in general.

ELLIPTICAL TITLES

234 If, in the title of a book, words corresponding with any facet of its Main Class are ABSENT, look into the book and SUPPLY it.

It may be sufficient to do this at stage 4 of the procedure laid down for the Colon Classification but at the beginning i.e. at stage 0 for the Decimal Classification. Enclose the words so supplied within inverted commas.

Examples

163 SMITH (Alexander). Introduction to inorganic Chemistry.

There is no word in the title to correspond with the Problem Facet of 'Chemistry' which is the Main Class of the book. A perusal of it shows that 'General' should be supplied to fill up that Facet.

164 TREADWELL (F. P.). Analytical chemistry tr. by William T. Hall. V. 1.

There is no word in the title to correspond with the Substance Facet of 'Chemistry' which is the Main Class of the book. A perusal of it shows that 'Inorganic' should be supplied to fill up that Facet.

165 WILSON (E. B.). Cyanide processes.

There is no word in the title to correspond with the Substance Facet of 'Technology' which is the Main Class of the book. A perusal of it shows that 'gold' should be supplied to fill up that Facet.

Note that this process was discovered in 1887.

166 ONIONS (C. T.). An advanced English syntax.

There is no word in the title to correspond either with the Stage Facet or with the Element Facet of 'Linguistics' which is the Main Class of the book and a perusal of it shows that 'Modern' and 'Sentence' should be supplied to fill up the two respective Facets.

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the book. A perusal of it shows that 'Political and general history' should be supplied to fill up this Facet.

179 MASUM BAKKARI (Sayyid Muhammad). *Tarikh-i-Sind* ed. ... by U. M. Daudpota.

There is no word in the title to correspond to the Problem or the Chronological Facets of 'History' which is the Main Class of the book. A perusal of it shows that 'Political and general history' and '159—' should be supplied to fill up these Facets.

180 HASAN KILAN MANTIK-UL-MULK. *Tarikh-i-Mantiqi*.

There is no word in this title to correspond to the Geographical or the Problem or the Chronological Facet i.e. to any Facet of 'History' which is the Main Class of the book. A perusal of it shows that 'Persia', 'Political and general history' and '191—' should be supplied to fill up these Facets.

181 MERRIMAN (R. B.). *Six contemporaneous revolutions*.

There is no word in this title to correspond to the Geographical or the Chronological Facets of 'History' which is the Main Class of the book. A perusal of it shows that 'Europe' and '165—' should be supplied to fill up these Facets.

182 RAFFLES (Thomas Stanford). *History of Java*. 3 V.

There is no word in this title to correspond to the Problem or the Chronological Facet of 'History' which is the Main Class of the book. A perusal of it shows that 'Political and general' and '181—' should be supplied to fill up these Facets.

183 ROSE (J. Holland), *etc.* *Eds.* *New Zealand* (Cambridge history of the British empire. 7.2.).

There is no word in this title to correspond to the Problem or the Chronological Facets of 'History' which is the Main Class of this book. A perusal of it shows that 'Political and general' and '192—' should be supplied to fill up these Facets.

ELLIPTICAL TITLES

184 MODLIN (George Matthews), *etc.* Social control of industry.

There is no word in this title to correspond to the Geographical or the Chronological Facets of 'Economics' which is the Main Class of the book while 'Industry' stands for the Business Facet [Other businesses] and 'Social control' stands for the Economic Facet [Organisation]. A perusal of the book shows that 'United States' and '193—' should be supplied to fill up these Facets.

185 VAN DER POST (A. P.) Economics of agriculture etc.

There is no word in this title to correspond to the Economic, or the Geographical or the Chronological Facets of 'Economics' which is the Main Class of the book. A perusal of it shows that 'Organisation', 'South Africa' and '193—' should be supplied to fill up these Facets.

186 ROUSSE (Thomas A.). Government control of cotton production

There is no word in this title to correspond to the Geographical or the Chronological Facets of 'Economics' which is the Main Class of the book. A perusal of it shows that 'United States' and '193—', should be supplied to fill up these Facets.

Exercise

1. For each of the titles 160—162 give the results at the remaining stages of procedure.
2. For each of the titles 163—186.
 - A. Fill up the ellipsis.
 - B. Translate the specific subject thus got into the Colon Number showing the results at all the stages of procedure.
 - C. Translate the specific subject thus got into the Decimal Number showing the results at all the stages of procedure.

CHAPTER 24

FOCUS AND VACANT FACETS

240 A book may be UNIFOCAL or MULTIFOCAL or DIFFUSE in any of the facets of its main class or any facet may be totally ABSENT.

Examples

187 YOUNG (George). The pendulum of progress: an essay in political science and scientific politics.

This book belongs to the Main Class 'Political science' which may have Type-of-State Facet and Problem Facet.

On the first Facet are found more than one focus: Monarchies, Democracy etc. It is, therefore, multifocal. In the Problem Facet also we find several foci like: 'Parts of government, Functions of government and Federalism.' Thus this facet also is multifocal.

188 NEWMAN (George). Citizenship and the survival of civilisation.

This book belongs to the Main Class 'Political science' which may have Type-of-state Facet and Problem Facet. But it is not concerned with any particular type of state; in fact, that Facet is altogether absent in the book. On the other hand, in the Problem Facet it is definitely focussed on 'Civic rights and duties'.

189 MADARIAGA (Salvador de). Anarchy or hierarchy.

This book belongs to the Main Class 'Political science' which may have Type-of-state Facet and Problem Facet. In the first Facet, the book is clearly focussed on 'Democracy' as the following subtitles of its two parts show: A criticism of liberal democracy and unanimous organic democracy. But in the Problem Facet it is quite diffuse.

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190 DODD (James Harvey). Introductory economics.

This book belongs to the Main Class 'Economics' which may have Business Facet, Economic Facet, Geographical Facet and Chronological Facet. The table of contents shows that two foci 'Banking and Public finance' are distinct in the first of these Facets and in addition other business figure in a diffuse away. The second Facet has all the possible foci, a chapter being devoted to each of them such as, Production, Trade, Demand and Supply, Prices, National Income, Profits, Wages etc. Thus this Facet is typically multifocal. While economic occurrences are narrated by way of illustration, there is neither a focus nor even a diffuse presentation in the Geographical and the Chronological Facets.

191 KING (Willford I.). Causes of economic fluctuations; possibilities of anticipation and control.

This too belongs to the Main Class 'Economics'. "Why does business fluctuate so violently instead of pursuing a steady upward course?" is the problem studied as it is stated in the preface—Business in general and not any business in particular. Thus there is no focus in the Business Facet; it is quite diffuse. The preface adds "This book gives a fairly accurate survey of the principal facts which have been established ... concerning the cause and cures of business ups and downs". Thus its interest is theoretical and occurrences in particular countries come in only in a subsidiary way as illustrative material. The Geographical and the Chronological Facets are, therefore, absent. Thus the Economic Facet is the only one that has a single focus and that focus is 'Business cycles'.

On the other hand look at the next book.

192 GOLDS-TEIN (J. M.). The agricultural crisis: is it a temporary problem? 1935.

This book too belongs to the Main Class 'Economics' and its Economic Facet also has the same single focus as the preceding one viz. 'Business cycles'. But it differs from it in that each of the other facets too has a single focus instead of being diffuse or absent. The focus

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in the Business Facet is 'Agricultural business' and that on the Geographical Facet is the 'World' while '193—' is the focus in the Chronological Facet.

193 HUTTON (Graham). *Ed.*. The burden of plenty.

This book also belongs to the Main Class 'Economics'. But it is a theoretical discussion of 'Planned economy' without reference to any particular business; nor is it its object to describe the 'Planned Economy' of any particular country or at any particular time. Thus, the Business Facet, the Geographical Facet and the Chronological Facet are absent in its specific subject. The 'Economic Facet' alone exists with its single focus at 'Planned economy'.

On the other hand, look at the next book.

194 COATES (W. P.), *etc.* The second five year plan of development of U. S. S. R. 1934.

The Economic Facet of this book also has 'Planned Economy' as its single focus. But its Business Facet is multifocal, while its Geographical and Chronological Facets figure with the single focus 'Russia' and '193—' respectively.

195 LANSBURGH (Richard H.). Industrial management.

This book deals with theory. Its Business Facet is diffuse; the Economic Facet is unifocal with 'Organisation' for the focus and the Geographical and the Chronological Facets are absent.

196 BRINKMANN (Theodor). Economics of the farm business tr. by Elizabeth Tucker Benedic.

This book also is on 'Organisation'. But on the business side it is confined to a single business *viz.* 'Agriculture'. Thus it is unifocal in the Business Facet and the Economic Facet. The Geographical and the Chronological Facets are absent in this book also.

197 COHEN (R. L.). Economics of agriculture.

FOCUS AND VACANT FACETS

This book deals with all the economic aspects of the single Business 'Agriculture', without attempting a systematic description or historical account of the Business in any particular country or period. Thus, it is unifocal with 'Agriculture' as the focus in the Business Facet, multifocal in the Economic Facet and is totally devoid of the Geographical and the Chronological Facets.

198 DAWSON (E. Sewell). Farm management in South Africa. 1931.

This book describes Agricultural Economics in all its aspects in South Africa in the 1930's. Thus, it is diffuse in the Economic Facet and unifocal in the other Facets, the foci being 'Agriculture' in the Business Facet, 'South Africa' in the Geographical Facet and '193—' in the Chronological Facet.

199 PATTERSON (S. Howard). Social aspects of industry, a survey of labour problems and of causes of industrial unrest.

This is a general book on 'Labour' without reference to any particular business: nor is it concerned with the history or the description of the labour problem in any particular country or any particular period. It is, thus, unifocal in the Economic Facet and is devoid of Business, Geographical and Chronological Facets.

200 BLOOMFIELD (J. J.). *etc.* Determination and control of industrial dust.

This book too is devoid of Business, Geographical and Chronological Facets and is unifocal in the Economic Facet, its focus 'Labour hygiene' being sharper than in the preceding book, as it is of smaller extension than 'Labour' of which it is a subdivision.

201 UNITED STATES. LABOUR STATISTICS (Bureau of—). Hygiene of the painter's trade.

This book has the same sharp focus as the preceding book in the Economic Facet and in addition it is unifocal in the Business Facet also, with 'Painter's business' for its focus.

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202 PICKLES (Herbert). The surface of the earth: elementary physical and economic geography.

This book belongs to the Main Class 'Geography' which may have Problem, Geographical and Chronological Facets. The last of these is absent. In the second it is focussed on the 'World' and is thus unifocal. In the first it is multifocal.

203 JONES (J. Rodwell), *etc.* North America: historical, economic and regional geography.

This book is like the preceding one in having the Problem Facet multilocal, the Geographical Facet, unifocal and the Chronological Facet absent. But it differs from it in the focus of its Geographical Facet being a little sharper as it is 'North America' which is less extensive than the 'World'.

204 PITHAWALA (Maneck B.). Geographical analysis of the Lower Indus Basin (Sind). 3 pts.

This book is like the two preceding ones in having the Problem, Geographical and Chronological Facets respectively multifocal, unifocal and absent respectively. Its focus in the Geographical Facet is sharper still as it is 'Sind' which is far less extensive than the 'World' or 'North America'.

205 WOOLDRIDGE (S. W.), *etc.* The physical basis of geography: an outline of geomorphology.

This book is unifocal in the Problem Facet with 'Physical geography' as the focus. As it is a theoretical book, the Geographical and the Chronological Facets are absent.

206 GREAT BRITAIN. METEOROLOGICAL (—Office). Indian Ocean currents.

This book is unifocal both in the Problem and Geographical Facets. 'Indian Ocean' is the focus in the latter. 'Ocean currents' which is the focus in the former is a sharper one than the focus of the preceding book in that Facet. The two books are alike in having the Chronological Facet absent.

FOCUS AND VACANT FACETS

207 GUILFORD (J. P.). General psychology.

This book belongs to the Main Class 'Psychology' which may have an Entity Facet and a Problem Facet. It is diffuse in the first and multifocal in the second.

208 ROBACK (A. A.). Psychology of character with a survey of temperament.

This book is like the preceding one in having its Entity facet diffuse. But it differs from it in having its Problem Facet unifocal with 'Character' for the focus.

209 MARTIN (Herbert). Formative factors in character: a psychological study in the normal development of childhood.

This book is unifocal in both the facets. The focus in the Problem Facet is 'Character' the same as in the preceding book, that in the Entity Facet being 'Child'.

210 JERSILD (Arthur T.). Child psychology.

This book is unifocal in the Entity facet and has 'Child' for its focus as the preceding book. But it is multifocal in the Problem Facet.

211 TAMBYAH (T. Isaac). Foregleams of God: a comparative study of Hinduism, Buddhism and Christianity.

This book belongs to the Main Class 'Religion' which may have a Religion Facet and a Problem Facet. It is multifocal in the former and diffuse in the latter.

212 LANG (Andrew). Myth, ritual and religion. 2 V.

This book is diffuse in the Religion Facet but unifocal in the Problem Facet with 'Mythology' for the focus.

213 VAN BUSKIRK (William R.). Saviors of mankind.

This book gives an account of Lao-Tze, Confucius, Gautama, Zoroaster, Moses, Jesus, Mahomet, Socrates etc. Most of these are founders of religion. The book, therefore, belongs to the Main Class 'Religion'. It is multifocal in the Religion Facet but unifocal in the Problem Facet with 'Founders of religion' as the focus.

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214 ROUSSEL (Alfred). *La religion Vedique.*

This book is unifocal in the Religion Facet with 'Vedic religion' as the focus and diffuse in the Problem Facet.

215 GRISWOLD (H. D.). *The religion of the Rig Veda.*

This is like the preceding except that the focus in the Religion Facet is sharper, as 'Rig Vedic religion' is a subclass of 'Vedic religion'.

216 WRIGHT (Joseph), *etc.* *Old English grammar.*

This book belongs to the Main Class 'Linguistics' which may have a Language Facet, a Stage Facet, a Problem Facet and an Element Facet. It is unifocal in the first two, 'English' and 'Old' being the respective foci. It is multifocal in the third and diffuse in the fourth.

217 WRIGHT (Joseph). *An elementary Middle English grammar.*

This book is like the preceding one in all respects except that its focus in the Stage Facet is 'Middle' instead of 'Old'.

218 ARMSTRONG (Lilias E.), *etc.* *Handbook of English intonation.*

This book is unifocal in the Language, Stage and Problem Facets with 'English', 'Modern' and 'Phonology' respectively for their foci. It is diffuse in the Element Facet.

219 RAPPOPORT (S.). *Russian Language.*

It is unifocal only in the Language and Stage Facets, with 'Russian' and 'Modern' respectively for focus. It is multifocal in the Problem Facet and diffuse in the Element Facet.

220 HILLARD (A. E.). *Elementary Greek exercises.*

In this book, all but the Problem Facet are unifocal the Problem Facet being either diffuse or multifocal.

FOCUS AND VACANT FACETS

'Greek', 'Ancient' and 'Practicing material' are the respective foci of the Language, Stage and Element Facets.

221 MACDONELL (Arthur Anthony). A Vedic grammar for students.

This book is multifocal in the Problem Facet and diffuse in the Element Facet. But it is unifocal in the Language and the Stage Facets with 'Sanskrit' and 'Ancient' for the respective foci.

222 REGNIER (A. D.). Etude sur idiome des Vedas etc.

This book is like the preceding book in the Language, Stage and Problem Facets. But it is unifocal in the Element Facet with 'Idioms' as its focus.

223 MANGAL DEVI SASTRI. *Ed. Rigveda prātīśikhyā*.

In this book, the Language Facet has 'Sanskrit' as its focus and the Stage Facet also is unifocal with 'Rig Vedic' as its focus. The Problem Facet too is unifocal with 'Phonology' as its focus. But the Element Facet is diffuse.

224 SPEIJER (J. S.). Sanskrit syntax.

In this book, the Language, Stage and Problem Facets are unifocal with 'Sanskrit', 'Classical' and 'Syntax' as their respective foci. The Element Facet is diffuse.

225 PISCHIEL (R.). Grammatik der Prakrit Sprachen.

In this book, the Language Facet is unifocal with 'Prakrit' as its focus. The Stage Facet is absent as no stages have been recognised for this language. The Problem Facet is multifocal and the Element Facet is diffuse.

226 JAIN (Banarsi Das). Ardhamagadhi reader.

In this book, the Language Facet is sharper as 'Ardhamagadhi' is a subclass of 'Prakrit'. Further, the Element Facet also is unifocal with 'Practicing material' for the focus.

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227 ANDERSON (D.). The Pali dātū-pāṭha.

This book differs from the preceding only in that its foci on the Language and the Element Facets are respectively 'Pali' and 'Roots'.

228 BARTON (George A.). Hittite chrestomathy with vocabulary.

This book is unifocal in the Language Facet with 'Hittite' as the focus. The Stage Facet is absent as stages have not been differentiated for the language. The Problem Facet is either diffuse or multifocal and the Element Facet is unifocal, with 'Practising material' as its focus.

229 SPECIMENS of Persian manuscripts for the use of candidates for the Degree of Honour and High Proficiency examinations in Persian.

This book is unifocal in the Language, Stage and Element Facets with 'Persian', 'Modern' and 'Practising materials' for their respective foci. It is diffuse in the Problem Facet.

230 ROBERTS (H.). Grammar of the Khassi language etc.

This book is unifocal in the Language Facet with 'Khassi Language' spoken by the tribes of Khasi hills in India. It has no Stage Facet as no stages have been recognised for the language. The Problem Facet is multifocal and the Element Facet, diffuse.

231 WATKINS (Mark Hanna). Grammar of Chichewa: a Bantu language of British Central Africa.

This book is like the preceding one except that the focus of the Language Facet is different.

232 AUROBINDO. Bases of Yoga.

The Main Class of this book is 'Mysticism and spiritual experience' which may admit of Religion, Problem and Entity Facets. The last of these is absent and the

FOCUS AND VACANT FACETS

first two are unifocal with 'Integral, Vedic' and 'Technique' for their respective foci.

233 UNDERHILL (Evelyn). *Mam and the supernatural: a study in theism.*

[*Last four sentences of the book:* "And in this loving, suffering surrender to the supernatural, the tiny human spirit achieves its glory and its rest. In so far as it is a creature of time it suffers. In so far as it partakes of Eternity—though it may not comprehend its own experience—that suffering is transfused by a deep exultancy, a still and living peace: for beyond and within the stress and conflict, it knows the unfolding presence of an infinite and unbreakable joy. And here it is perhaps that the changeful soul of man draws nearest to the unchanging, and tastes the peace, the splendour and the pity that dwelt together in the heart of God.]

In this book the Religion Facet is absent; but the other two Facets are unifocal: 'Interpretations' being the focus of the Problem Facet and 'God' of the Entity Facet.

234 INAYAT KHAN. *Way of illumination: a guide book to the Sufi movement.*

This book is unifocal in the Religion Facet with 'Sufism' as its focus. The Problem Facet and the Entity Facet are absent.

235 HILDITCH (T. P.). *Catalytic processes in applied chemistry.*

This book belongs to the Main Class 'Technology' which may admit of a Substance Facet and a Problem or Process Facet. The first of these is absent and the second is unifocal with 'Catalysis' for the focus.

236 CAMN (John Cannell). *Manufacture of dyes* ed. by J. F. Thorpe.

This book has the Substance Facet unifocal with 'Dyestuff' as the focus but diffuse in the other Facet.

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237 KASINATHAN (N.). Manufacture of photographic plates in India.

This book is like the preceding one except that the focus of the Substance Facet is 'Photographic plates'.

238 WALKER (James). Introduction to physical chemistry.

This book belongs to the Main Class 'Chemistry', which may have a 'Problem Facet' and a 'Substance Facet'. The second of these is diffuse and the first is unifocal with 'Physical chemistry' as its focus.

239 VAN'T HOFF (J. H.). Studies in chemical dynamics.

This book is like the preceding one except that the focus in the Problem Facet is sharpest as 'Dynamics of chemical action' is a subclass of 'Physical chemistry'.

240 BONE (William A.). Flame and combustion in gases.

This book is like the preceding one except that its focus is sharper still as 'Flame, Combustion' is a subclass of 'Dynamics of chemical action'.

Exercise

For each of the titles 241—318.

- A. State the main class and name the facets that it may have.
- B. State for each facet whether it is unifocal, multifocal or diffuse or whether it is absent.
- C. Distribute the terms in the title to their respective facets.

241 FINER (Herman). Theory and practice of modern government.

242 BENN (Ernest J. P.). Modern government as a busybody in other men's matters.

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243. ROOT (Elihu). Citizen's part in government.
244. LASKI (Harold J.). Liberty in the modern state.
245. SWABEY (Marie Collins). Theory of the democratic state.
246. PALMIERI (Mario). Philosophy of fascism.
247. REID (Margaret G.). Consumers and the market.
248. DOBB (Maurice). Wages.
249. LANGE (Oskar), *etc.* On the economic theory of socialism.
250. HISKETT (W. R.), *etc.* Searchlight on social credit *etc.*
251. WHITEHEAD (Harold). Administration of marketing and selling.
252. EINZIG (Paul). Foreign balances.
253. SUBBA RAO (N. S.). Some aspects of economic planning.
254. QURESHI (Anwar Iqbal). State and the economic life, being a study of the methods of state intervention in economic life in the leading countries of the world with special reference to India.
255. WILLSMORE (A. W.). Business budgets and budgetary control.
256. WHELDON (Harold H.). Cost-accounting and costing methods.
257. YODER (Dale). Labour economics and labour problems.
258. JONES (G. P.). Workers abroad. 1939.
259. SHIVA RAO (B.). Industrial worker in India. 1939.

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260 INTERNATIONAL LABOUR OFFICE. Labour conditions in Indo-China. 1938.

261 APP (Frank), *etc.* Farm economics, management and distribution ed. by K. W. Gregory.

262 SEN (Sachin). Studies in the land economics of Bengal. 1935.

263 BHATNAGAR (B. G.). Studies in the rural economy of the Allahabad district. 1924.

264 JENSEN (E.). Danish agriculture, its economic development: a description and economic analysis centering on the free trade epoch 1870—1930.

265 INDIAN glass industry. 1940.

266 UNITED STATES. LABOUR STATISTICS (Bureau of—). Productivity of labour in glass industry [in the U.S.A.]. 1927.

267 INDIAN cotton mill industry. 1940.

268 FONG (H. D.). Cotton industry and trade in China. 2 V. 1932.

269 KAMISAKA (Seitaro). Cotton industry of Japan. 1934.

270 RAMACHANDRA RAO (B.). Economics of leather industry with special reference to Bengal. 1925.

271 UNITED STATES. LABOUR STATISTICS. (Bureau of—). Conditions in the shoe industry in Haverhill, Mass. 1928.

272 BUCHANAN (R. Ogilvie). Pastoral industries of New Zealand. 1935.

273 DOSSANT (Gulamhoosein A.). Present problems of the motion picture industry [in India]. 1936.

274 FRY (G. C.). Text-book of [world] geography.

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275 BUNTING (W. L.), *etc.* Geography of the British empire.

276 MISCART (Herbert). The origin of human reason: being an examination of recent hypothesis concerning it.

277 PIAGET (Jean), *etc.* Judgment and reasoning in the child tr. by M. Warden.

278 STERN (William). Psychology of early childhood up to the sixth year of age *etc.*

279 CONKLIN (Edmund S.). Principles of adolescent psychology.

280 HOLLINGWORTH (Leta S.). Psychology of sub-normal children.

281 MADARIAGA (Salvador de). Englishmen, Frenchmen, and Spaniards: an essay in comparative psychology.

282 FORLONG (J. G. R.). Short studies in the science of comparative religions embracing all the religions of Asia.

283 KRAPPE (Alexandre Haggerty). Mythologie universelle.

284 BLOOMFIELD (Maurice). Religion of the Veda.

285 GUERINOT (A.). La religion de Jaina: histoire, doctrine, culte, coutumes, institutions.

286 DRUMMOND (James). Via, veritas, vita; lectures on "Christianity in its most simple and intelligible form" delivered at Oxford and London in April and May 1894.

287 PRITCHARD (F. H.). Essentials of modern English.

288 STOKOE (H. R.). Understanding [modern English] syntax.

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- 289 HUGUENET (A. P.). [Modern] French language ed. by H. J. Weintz.
- 290 NICHOLSON (G. G.). A practical introduction to [modern] French phonetics.
- 291 SEMENOV (Anatol F.). The [ancient] Greek language and its evolution: an introduction to its scientific study.
- 292 MACDONELL (Arthur Anthony). Vedic reader for students.
- 293 RAMACHANDRA SASTRI (G. A.). Manual of [classical] Sanskrit grammar.
- 294 GHOSH (Batakrishna). Linguistic introduction to [classical] Sanskrit.
- 295 BOTHLINGER (Otto). Sanskrit cresthomathie.
- 296 LANMAN (Charles Rockwell). A Sanskrit reader.
- 297 ALBRECHT (S. Th.). Die Accentu Sanscritico [classical].
- 298 PUNNANANDA SWAMI (Samana). Pali selections.
- 299 JAIN (Banarsi Das). Ardha-Magadhi reader.
- 300 RAVERTY (H. G.). A grammar of the Pukhto, Pushto or language of the Afghans etc.
- 301 PLATTES (John T.). Grammar of the Hindustani or Urdu language.
- 302 RAMASWAMI AYYAR (L. V.). The evolution of Malayalam morphology.
- 303 SCHULZE (F. V. P.). Vocabulary of Kuvi-Kond language with short sentences on general subjects for conversational purpose.
- 304 ILLERMAN (E.). Meaning and value of mysticism.

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305 MUKERJEE (Radhakamal). Theory and art of mysticism.

306 HODGSON (Geraldine). Nature and illumination. [*Extract from the preface*: Can this relation of man to nature be wholly excluded from true, genuine mysticism ... The nature of apprehension in natural things awaits explication and definition. ... The power of spiritual apprehension goes back a long way in our literature].

307 MYERS (Frederic W. II.). Human personality and its survival of bodily death ed. by D. B. and L. H. M

308 JAQUIN (Noel). Scientific palmistry.

309 OLIVER (C. W.). An analysis of magic and witchcraft etc.

310 KUNALAYANANDA. Prāṇāyāma. (Popular yoga. V, 2.) [Breath regulation].

311 SUZUKI (Daisetz Tertaro). The training of Zen Buddhist monk etc.

312 REGARDIE (Israel). A garden of pomegranates: an outline of the Qabalah.

313 WATTE (Arthur Edward). Lamps of western mysticism: essays in the life of the soul in God.

314 SYKES (Walter J.). Principles and practice of brewing ed. by Arthur R. Ling.

315 MANTELL (C. L.). Industrial electro-chemistry.

316 KIRSHAW (John B. C.). Recovery and use of industrial and other wastes.

317 STEWART (A. W.). Stereochemistry.

318 EMICH (Friedrich). Lehrbuch der Mikrochemie.

241 The class number of a book will TRANSLATE only those facets of its specific subject in

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which it is UNIFOCAL and generally leave UN-TRANSLATED those in which it is MULTIFOCAL or DIFFUSE and those that are ABSENT.

That an absent facet cannot find a place in the class number is obvious, but that facets not unifocal should also be treated as if they were absent is a matter of convention.

The number of possible foci in any facet is equal to the number of first-order divisions in the schedule of divisions of the main class in question (based on the train of characteristics corresponding with the facet concerned). For example, according to the Colon Classification the Type-of-State Facet of the main class 'Political science' may have as many as 8 foci. If a book is predominantly focussed on one of these, it is unifocal. But it may be focussed with equal emphasis on any number of the first-order divisions, short of all. A book so focussed is called 'Partially comprehensive' in the facet concerned. No scheme of classification appears to have so far succeeded in inventing a manageable notation to distinguish every kind of partial comprehension. It is a problem that awaits research. Some of the difficulties of the problem have been described in detail in my *Prolegomena to library classification* (Pp. 143—149) under the heading of Canon of Partial Comprehension, which is described there as "a challenge to the library profession and a first-class research problem for gifted students".

In the meantime we adopt the convention that the facet in which a book is multifocal should be treated as if it were absent.

Again it may happen that a book is focussed equally on one and all of the first order divisions corresponding with a facet, in which case it is 'fully comprehensive' in the facet. But even so we shall adopt the convention of treating the facet as if it were absent.

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We need hardly say, then, that a facet in which a book is diffuse (not focussed at all) should be treated as if it were absent.

This equalisation of fully comprehensive, partially comprehensive and diffuse facets with absent facets is one of the sore points to-day in the technique of classification. In the absence of a classificatory device to distinguish between them, the aid of the catalogue is invoked to meet the situation provisionally in certain cases of multifocal facets. One of the foci is, in certain circumstances, chosen as if it were the only focus and the class number of the book is constructed. Then a cross-reference entry is given from each of the foci not selected. For example if a book on political science has 'Parts of government' and 'Functions of government' for its foci in the Problem Facet, the former may decide the class number of the book and the latter may be used for constructing the class-number for which a cross-reference entry is to be made: The book is numbered W:2 and for W:3 the reader is directed by a cross-reference to look up this book. Such cross-references may also be given even if the facet is treated as absent. These cross-references are called analytical entries as they virtually analyse the book and give an entry for each focus in a multifocal facet.

242 Facets deemed vacant by Rule 241 are called VACANT FACETS.

The name shows that in the class number, the space belonging to the facet will have no number.

243C In the Colon Classification, the COLON following a facet should be RETAINED though the facet is vacant, except that the Colons at the END of a class number may be DROPPED.

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The result is (1) that there will be indication at stage (8) of the procedure as to what schedule should be used to translate a digit and (2) that no class number will end with a colon.

The reason for the retention of the colon after vacant facets is not really as trivial as to be exhausted by the first of these results. The meaning of the class number will be totally different if the colon is not retained. Suppose the Specific Subject is 'Functions of government'. By rule 243C, it will be translated into the Colon Number W:3. If the colon were dropped, it will read as W3 which would mean 'Feudal institutions'. The fact is that the colon is part of the structure of the formula for the main class and we should not pull it out light-heartedly.

In the syntax of the Colon Language, the function and meaning of the constituent elements of a number are determined on a 'Gestalt basis' and the colons form a fundamental part of the Gestalt.

It is obvious, however, that no purpose will be served syntactically by a colon at the end of a class number. That is why it is laid down that no class number need end with a colon.

One consequence of this rule may be explicitly stated. If two or more facets, which are consecutive but do not include the end one of a main class, are vacant, there will be an equal number of consecutive colons in the class number.

243C4 At stage 4 of the procedure for Colon Classification, write within the bracket corresponding with the facet "Vacant" with the reason in that one of the following forms which is appropriate "∴ Multifocal" "∴ Diffuse"

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or “ ‘ Absent ”; if one of the multiple foci is preferred, write after the name of the preferred focus “ though really multifocal ”.

243C5 At stage 5, all the reasons and remarks prescribed for stage 4 may be dropped.

243C7 At stage 7, the absence of the number in a vacant facet must be explicitly stated in a form like “ No Problem Number ”.

243D The procedure for Decimal Classification needs no amplification or amendment.

Examples

The class numbers are worked for the books 187—240 cited as examples under Rule 240. The results are shown at some stages only.

187 YOUNG (George). The pendulum of progress: an essay in political science and scientific politics.

Colon Number

(2) W [T]:[P]

(4) W [Vacant ‘ ‘ multifocal]: [Vacant ‘ ‘ multifocal]

(5) W [Vacant]:[Vacant]

(6) W

Note that the words in the title are merely used to determine the main class. They are not suitable for distribution into the brackets.

Decimal Number

(5) 32

(6) Co-extensiveness is reached

188 NEWMAN (George). Citizenship and the survival of civilisation.

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Colon Number

- (4) W [Vacant ∴ absent] : [Citizenship etc.]
- (5) W [Vacant] : [Relation of State with citizens]
- (6) W:5

Decimal Number

- (5) 323.4
- (6) Co-extensiveness is reached

189 MADARIAGA (S. de). Anarchy or hierarchy.

Colon Number

- (4) W [Anarchy or hierarchy] : [Vacant ∴ diffuse]
- (5) W [Democracy] : [Vacant]
- (6) W6

Decimal Number

- (5) 321.4
- (6) Co-extensiveness is reached

190 DODD (James Harvey). Introductory economics.

Colon Number

- (2) X [B] : [E] [G] : [C]
- (4) X [Vacant ∴ multifocal] : [Vacant ∴ multifocal] : [Vacant ∴ absent] : [Vacant ∴ absent]
- (5) X [Vacant] : [Vacant] : [Vacant] : [Vacant]
- (6) X

Decimal Number

- (5) 33
- (6) Co-extensiveness is reached

191 KING (Willford I.). Causes of economic fluctuations: possibilities of anticipation and control.

Colon Number

- (4) X [Vacant ∴ diffuse] : [Causes of etc.] : [Vacant ∴ absent] : [Vacant ∴ absent]

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(5) X [Vacant] : [Business cycle] : [Vacant] :
[Vacant]

(6) X:74

Decimal Number

(5) 380.124 [By 13th edn.] and 338.54 (By 14th edn.)

(6) Co-extensiveness is reached

Note that the former occurs in the class ' Commerce '. Consistently with this and in conformity to the Canon of Context, this division is termed ' Trade cycles '. But ' Economic fluctuations ' includes not only ' Trade cycles ' but also ' Financial ' and ' Production ' cycles '. Thus this class is too narrow for the book. A note in small type under 380.1242 in the *Decimal classification* recognises this. This defect was remedied in 1942 by the supply of the second number given above.

192 GOLDSTEIN (J. M.). The agricultural crisis: is it a temporary problem? 1935.

Colon Number

(4) X [Agricultural]: [Crisis etc.]: [' World ']:
[' 193—']

(5) X [Agriculture] : [Depression] : [World] :
[193—]

(6) X9J:742:1:N3

Decimal Number

(5) 338.15

(6) Co-extensiveness is not reached since the Chronological and Geographical Facets are left unrepresented

Note that this number at least has been furnished only by the 14th edition of 1942. Before that it could not be decided whether it should be put in the class ' 338.1 Agricultural products ' or in ' 380.124 Trade cycles '

193 HUTTON (Graham). *Ed.* The burden of plenty.

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Colon Number

- (4) X [Vacant ∴ absent] : [Burden of plenty]:
[Vacant ∴ absent] : [Vacant ∴ absent]
- (5) X [Vacant] : [Planned economy] : [Vacant]:
[Vacant]
- (6) X:75

Decimal Number

- (5) 338 [As indicated by the index of the *Decimal classification*]
- (6) Co-extensiveness is not reached, as this number really represents the far more extensive class 'Production' or at best 'Economic organisation' and misses out the essential idea of 'Planning'. The 14th edition has created the number 338.54 for planning.

194 COATES (W. P.), etc. The second five-year plan of development of U. S. S. R. 1934.

Colon Number

- (4) [Vacant ∴ multifocal] : [Five-year plan] :
[U. S. S. R.] : [Second i.e. 193—]
[193—]
- (5) X [Vacant] : [Planned economy] : [Russia]:
[193—]
- (6) X:75:58:N3

Decimal Number

- (5) 338.0947084
- (6) Co-extensiveness is not reached although all the three unifocal facets are represented for the reason given in the preceding example.

Note that rule 118 (a) of the *Code for classifiers* suggests the above number or 330.947084

The 14th edn. has made quite a different provision viz. 338.947084. But then this stands for 'Industrial legislation-' which is less general than 'Planning'.

195 LANSBURGH (Richard H.). Industrial management.

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Colon Number

- (4) X [Vacant ∴ diffuse] : [Industrial management] : [Vacant ∴ absent] : [Vacant ∴ absent]
- (5) X [Vacant] : [Organisation] : [Vacant] : [Vacant]
- (6) X:8

Decimal Number

- (5) 658
- (6) Co-extensiveness is reached

Note that the main class is not 'Economics' in the *Decimal classification*

196 BRINKMANN (Theodor). Economics of the farm management etc.

Colon Number

- (4) X [Farm] : [Economics of management] : [Vacant ∴ absent] : [Vacant ∴ absent]
- (5) X [Agricultural economics] : [Organisation] : [Vacant] : [Vacant]
- (6) X9J:8

Decimal Number

- (5) 338.12
- (6) Co-extensiveness is reached

197 COHEN (R. L.). Economics of agriculture.

Colon Number

- (4) X [Economics of agriculture] : [Vacant ∴ multifocal] : [Vacant ∴ absent] : [Vacant ∴ absent]
- (5) X [Agricultural economics] : [Vacant] : [Vacant] : [Vacant]
- (6) X9J

Decimal Number

- (5) 338.1
- (6) Co-extensiveness is reached

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198 DAWSON (E. Sewell). Farm management in South Africa. 1931.

Colon Number

- (4) X [Farm management] : [Vacant ∴ diffuse] :
[South Africa] : [" 193—"]
- (5) X [Agricultural economics] : [Vacant] :
[South Africa] : [193—]
- (6) X9J::63:N3

Decimal Number

- (5) 338.10968
- (6) Co-extensiveness is not reached because there is
no provision for the Chronological Facet

199 PATTERSON (S. Howard). Social aspects of industry, a survey of labour problems and of causes of industrial unrest.

Colon Number

- (4) X [Vacant ∴ absent] : [Social etc.] : [Vacant
∴ absent] : [Vacant ∴ absent]
- (5) X [Vacant] : [Labour] : [Vacant] : [Vacant]
- (6) X:9

Decimal Number

- (5) 331
- (6) Co-extensiveness is reached

200 BLOOMFIELD (J. J.), etc. Determination and control of industrial dust.

Colon Number

- (4) X [Vacant ∴ absent] : [Determination etc.] :
[Vacant ∴ absent] : [Vacant ∴ absent]
- (5) X [Vacant] : [Industrial poisons ... dust etc.] :
[Vacant] : [Vacant]
- (6) X:944

Note that co-extensiveness is not reached as 944 is not yet subdivided

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Decimal Number

(5) 331.822

(6) Co-extensiveness is not reached for the same reason as in the Colon Number because the subdivision is not carried up to 'Dust'.

201 UNITED STATES. LABOUR STATISTICS (Bureau of—). Hygiene of the painter's trade.

Colon Number

(4) X [Painter's trade] : [Hygiene] : [Vacant absent] : [Vacant ∴ absent]

(5) X [Painter's trade] : [Industrial poisons etc.] : [Vacant] : [Vacant]

(6) X9MF5895.944

Decimal Number

(5) 331.828676

(6) Co-extensiveness is reached

202 PICKLES (Herbert). The surface of the earth: elementary physical and economic geography.

Colon Number

(2) U [P] : [G] : [C]

(4) U [Vacant ∴ multifocal] : [Earth] : [Vacant ∴ absent]

(5) U [Vacant] : [World] : [Vacant]

(6) U:1

Decimal Number

(5) 91

(6) Co-extensiveness is reached

Note that out of the two problems studied in the book, 'Physical geography' will have the number 551 and 'Economic geography' 380.9. Is it proper to put their combination in a still another number 91?

203 JONES (Ll. Rodwell), *etc.* North America: historical, economic and regional geography.

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Colon Number

- (4) U [Vacant ∴ multifocal] : [North America] :
[Vacant ∴ absent]
- (5) U [Vacant] : [North America] : [Vacant]
- (6) U:71

Decimal Number

- (5) 917
- (6) Co-extensiveness is reached

204 PITHAWALA (Maneck B.). Geographical analysis of the Lower Indus Basin (Sind). 3 pls.

Colon Number

- (4) U [Vacant ∴ multifocal] : [Lower Indus Basin (Sind)] : [Vacant ∴ absent]
- (5) U [Vacant] : [Sind] : [Vacant]
- (6) U:233

Decimal Number

- (5) 915.47
- (6) Co-extensiveness is not reached as Sind has not been individualised

205 WOOLDRIDGE (S. W.), etc. The physical basis of geography: an outline of geomorphology.

Colon Number

- (4) U [Physical basis etc.] : [Vacant ∴ absent] :
[Vacant ∴ absent]
- (5) U [Physical geography] : [Vacant] : [Vacant]
- (6) U2

Decimal Number

- (5) 551
- (6) Co-extensiveness is reached

Note that this book goes into the main class 'Geology' in the Decimal Classification—not very satisfying to the Canon of Helpful Order

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206 GREAT BRITAIN. METEOROLOGICAL (—Office).
Indian Ocean currents.

Colon Number

- (4) U [Currents] : [Indian Ocean] : [Vacant ∴
absent]
- (5) U [Currents] : [Indian Ocean] : [Vacant]
- (6) U2562:91

Decimal Number

- (5) 551.477
- (6) Co-extensiveness is reached

Note that this book goes like the preceding one into the main class 'Geology'

207 GUILFORD (J. P.). General psychology.

Colon Number

- (2) S [E] : [P]
- (4) S [Vacant ∴ diffuse] : [Vacant ∴ multifocal]
- (5) S [Vacant] : [Vacant]
- (6) S

Decimal Number

- (5) 159.9
- (6) Co-extensiveness is reached

208 ROBACK (A. A.). Psychology of character with a survey of temperament.

Colon Number

- (4) S [Vacant ∴ diffuse] : [Character]
- (5) S [Vacant] : [Character]
- (6) S:74

Decimal Number

- (5) 159.92332
- (6) Co-extensiveness is reached

209 MARTIN (Herbert). Formative factors in character: a psychological study in the normal development of childhood.

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Colon Number

- (4) S [[Childhood] : [Formative factors in character etc.]]
- (5) S [[Child] : [Character]]
- (6) S1.74

Decimal Number

- (5) There is no provision to represent both the facets. The *Code for classifiers* gives no direction. It is decided to prefer the Problem Facet and ignore the Entity Facet. The number is, therefore, 159.92332
- (6) Co-extensiveness is not reached because the Entity Facet has been ignored with the result that the Decimal Classification has to translate this book and the preceding book which is of wider extension into the same class number—"translating 'Rose' into 'Flower' on account of poverty of language"

210 JESSUP (Arthur T.) Child psychology.

Colon Number

- (4) S [Child] : [Vacant : multifocal]
- (5) S [Child] : [Vacant]
- (6) S1

Decimal Number

- (5) 159.9227
- (6) Co-extensiveness is reached

211 TAMBYAH (T. Isaac). Foregleams of God: a comparative study of Hinduism, Buddhism and Christianity.

Colon Number

- (2) Q [R] : [P]
- (4) Q [Vacant : multifocal] : [Vacant : diffuse]
- (5) Q [Vacant] : [Vacant]
- (6) Q

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Decimal Number

(5) 291

(6) Co-extensiveness is reached

212 LANG (Andrew). Myth, religion and ritual.

Colon Number

(4) Q [Vacant : diffuse] : [Myth etc.]

(5) Q [Vacant] : [Mythology]

(6) Q:1

Decimal Number

(5) 291.13

(6) Co-extensiveness is reached

213 VAN BUSKIRK (William R.). Saviors of mankind.

Colon Number

(4) Q [Vacant : multifocal] : [Saviors of religion]

(5) Q [Vacant] : [Founders of religion]

(6) Q:33

Decimal Number

(5) 291.64

(6) Co-extensiveness is reached

214 ROUSSEL (Alfred). La religion Vedique.

Colon Number

(4) Q [Vedique] : [Vacant : diffuse]

(5) Q [Hinduism (Vedic)] : [Vacant]

(6) Q1

Decimal Number

(5) 294.1

(6) Co-extensiveness is reached

215 GRISWOLD (H. D.). The religion of the Rigveda.

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Colon Number

- (4) Q [Rigveda] : [Vacant] : diffuse
- (5) Q [Rigvedic religion] : [Vacant]
- (6) Q11

Decimal Number

- (5) 294.1
- (6) Co-extensiveness is not reached as 'Vedic religion' is not subdivided in the schedule

216 WRIGHT (Joseph), *etc.* Old English grammar.

Colon Number

- (2) P [L] : [S] [P] : [E]
- (4) P [English] : [Old] [Vacant] : multifocal :
[Vacant] : diffuse
- (5) P [English] : [Old] : [Vacant] : [Vacant]
- (6) P111:D

Decimal Number

- (5) 429
- (6) Co-extensiveness is reached

217 WRIGHT (Joseph). An elementary Middle English grammar.

Colon Number

- (4) P [English] : [Middle] : [Vacant] : multifocal :
[Vacant] : diffuse
- (5) P [English] : [Middle] : [Vacant] : [Vacant]
- (6) P111:E

Decimal Number

- (5) 427.02
- (6) Co-extensiveness is reached

Note that this number is indicated only in the index of the Decimal classification

218 ARMSTRONG (Lillias E.), *etc.* Handbook of English intonation.

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Colon Number

- (5) P [English] : [Modern] [Phonology] : [Vacant]
- (6) P111:J1

Decimal Number

- (5) 421.5
- (6) Co-extensiveness is reached

219 RAPPOPORT (S.). Russian language.

Colon Number

- (4) P [Russian] : [“ Modern ”] [Vacant ‘.’ multifocal] : [Vacant ‘.’ diffuse]
- (5) P [Russian] : [Modern] [Vacant] : [Vacant]
- (6) P142:J

Decimal Number

- (5) 491.7
- (6) Co-extensiveness is reached

220 HILLARD (A. E.). Elementary Greek exercises.

Colon Number

- (4) P [Greek] : [“ Ancient ”] [Vacant ‘.’ diffuse] : [Exercises]
- (5) P [Greek] : [Ancient] [Vacant] : [Practising material]
- (6) P13:C:9

Decimal Number

- (5) 488.6
- (6) Co-extensiveness is reached

Note: Use tables 3 and 4 at the end of the *Decimal classification*.

221 MACDONELL (Arthur Anthony). A Vedic grammar for students.

Colon Number

- (4) P [Sanskrit] : [Vedic] [Vacant ‘.’ multifocal] : [Vacant ‘.’ diffuse]

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(5) P [Sanskrit] : [Vedic] [Vacant] : [Vacant]

(6) P15:A

Decimal Number

(5) 491.1

(6) Co-extensiveness is reached

Note that 491.2 is shown as 'Sanskrit' in the *Decimal classification* and 491.1 as Indic. As there is much difference between 'Vedic Sanskrit' and 'Classical Sanskrit', it is desirable to reserve 491.1 for the former and 491.2 for the latter.

222 REGNIER (A. D.). Etude sur idiome des Vedas etc.

Colon Number

(4) P ["Sanskrit"] : [Vedic] [Vacant] : multi-focal] : [Idioms]

(5) P [Sanskrit] : [Vedic] [Vacant] : [Idioms]

(6) P15:A:5

Note that the number for 'Idioms' is indicated in the commentary (para 2) on Rule P24 of the *Colon classification*.

Decimal Number

(5) 491.131

(6) Co-extensiveness is reached

223 MANGAL DEVA SASTRI. *Ed.* Rigveda prātisākhya.

Colon Number

(4) P ["Sanskrit"] : [Rig Vedic] [Prātisākhya] : [Vacant] : diffuse]

(5) P [Sanskrit] : [Rig Vedic] [Phonology] : [Vacant]

(6) P15:10A1

Note that Rule P20A of the *Colon classification* prescribes the method of constructing the Stage Number for cases like this.

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Decimal Number

- (5) 491.15
- (6) Co-extensiveness is not reached since the different Vedic languages cannot be distinguished

224 SPELZER (J. S.). Sanskrit syntax.

Colon Number

- (4) P [Sanskrit] : [" Classical "] [Syntax] :
[Vacant : diffuse]
- (5) P [Sanskrit] : [Classical] [Syntax] : [Vacant]
- (6) P15:C3

Decimal Number

- (5) 491.152
- (6) Co-extensiveness is reached

225 PISCHEL (R.). Grammatik der Prakrit Sprachen.

Colon Number

- (4) P [Prakrit Sprachen] : [Vacant : absent]
[Vacant : multifocal] : [Vacant : diffuse]
- (5) P [Prakrit] : [Vacant] [Vacant] : [Vacant]
- (6) P151

Decimal Number

- (5) 491.3
- (6) Co-extensiveness is reached

226 JAIN (Banarsi Das). Ardhamagadhi reader.

Colon Number

- (4) P [Ardhamagadhi] : [Vacant : absent] [Vacant
: multifocal] : [Reader]
- (5) P [Ardhamagadhi] : [Vacant] [Vacant] :
[Practising material]
- (6) P1516::9

Decimal Number

- (5) 491.386
- (6) Co-extensiveness is not reached as 'Ardhamagadhi' has not been individualised

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227 ANDERSON (D.). The Pali dātū-pāṭha.

Colon Number

- (4) P [Pali] : [Vacant ∴ absent] [Vacant ∴ multifocal] : [Dātu-pāṭha]
- (5) P [Pali] : [Vacant] [Vacant] : [Roots]
- (6) P1511::301

Decimal Number

- (5) 491-320151
- (6) Co-extensiveness is not reached as ' Inflections ' has not been subdivided so as to individualise ' Roots '

228 BARTON (George A.). Hittite chrestomathy with vocabulary.

Colon Number

- (4) P [Hittite] : [Vacant ∴ absent] [Vacant ∴ multifocal] : [Chrestomathy etc.]
- (5) P [Hittite] : [Vacant] [Vacant] : [Practising material]
- (6) P197::9

Decimal Number

- (5) 491-9987
- (6) Co-extensiveness is not reached as ' Hittite ' is not individualised

229 SPECIMENS of Persian manuscripts for the use of candidates for the Degree of Honour and High Proficiency examinations in Persian.

Colon Number

- (4) P [Persian] : [“ Modern ”] [Vacant] : [Specimens etc.]
- (5) P [Persian] : [Modern] [Vacant] : [Practising materials]
- (6) P164;J:9

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Decimal Number

- (5) 491.5587
- (6) Co-extensiveness is reached

230 ROBERTS (H.). Grammar of the Khassi language.

Colon Number

- (4) P [Khassi language] : [Vacant ∴ absent]
[Vacant ∴ multifocal] : [Vacant ∴ diffuse]
- (5) P [Language of Khassi hills] : [Vacant] [Vacant] : [Vacant]
- (6) P446191

Decimal Number

- (5) 495.99
- (6) Co-extensiveness is not reached as the Khassi language has not been individualised

231 WATKINS (Mark Hanna). Grammar of Chichewa:
a Bantu language of British Central Africa.

Colon Number

- (4) P [Chichewa etc.] : [Vacant ∴ absent] [Vacant ∴ multifocal] : [Vacant ∴ diffuse]
- (5) P [Language of British Central Africa] : [Vacant] [Vacant] : [Vacant]
- (6) P615

Decimal Number

- (5) 496.3
- (6) Co-extensiveness is not reached as Chichewa language has not been individualised

232 AUROBINDO. Bases of yoga.

Colon Number

- (2) Δ [R] : [P] : [L]
- (4) Δ ["Integral"] : [Bases of Yoga] : [Vacant ∴ absent]
- (5) Δ [Integral] : [Technique] : [Vacant]
- (6) Δ 1:3

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Decimal Number

(5) 149.3

(6) Co-extensiveness is not reached, as this number stands for 'Mysticism' in general and has no subdivisions

Note that this is put in the main class 'Philosophy'. though the practice of Yoga is not philosophy.

233 UNDERHILL (Evelyn). Man and the supernatural: a study in theism.

Colon Number

(4) Δ [Vacant '.' absent] : [" Interpretation "] :
[Man and the supernatural : a study in theism]

(5) Δ : [Interpretation] : [God]

(6) Δ :7:11

Decimal Number

(5) 211

(6) Co-extensiveness is virtually reached

234 INAYAT KHAN. Way of illumination: a guide book to the Sufi movement.

Colon Number

(4) Δ [Sufi movement] : [Vacant '.' absent] :
[Vacant '.' absent]

(5) Δ [Sufism] : [Vacant] : [Vacant]

(6) Δ 73

Decimal Number

(5) 181.5

(6) Co-extensiveness is reached

Note that it is forcing the issue to put Sufism down as a school of philosophy

It would be more helpful if the books 233 and 234 are in one Main Class. They are alike in approach.

235 HILDITCH (T. P.). Catalytic processes in applied chemistry.

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Colon Number

- (2) F [S] : [P]
- (4) F [Vacant ' . absent] : [Catalytic processes]
- (5) F [Vacant] : [Catalysis]
- (6) F:8

Decimal Number

- (5) 541.39
- (6) This is not helpful placing. By the Canon of Context it is clear that this number really stands only for the theory of Catalysis and not for its application. A more appropriate place will be in 660 Technology

Note that the place is indicated only in the index of the *Decimal classification* and there is no mention in the Complete Tables.

236 CAIN (John Cannell) Manufacture of dyes ed. by J. F. Thorpe.

Colon Number

- (4) F [Dyes] : [Vacant ' . diffuse]
- (5) F [Dyes] : [Vacant]
- (6) F58

Decimal Number

- (5) 667.2
- (6) Co-extensiveness is not reached as the index to the *Decimal classification* shows that this is the Decimal Number both for ' Dye manufacture ' and ' Dyeing '

237 KASINATHAN (N.). Manufacture of photographic plates in India.

Colon Number

- (4) F [Photographic plates] : [Vacant ' . diffuse]
- (5) F [Photographic plates] : [Vacant]
- (6) FM95

FACET-ANALYSIS

Note that the number for 'Photographic plates' is got by the Subject Device, as required by Rule E291 in the *Colon classification*. The Subject Device itself is defined in Rule 66

Decimal Number

(5) 771

(6) The Canon of Context does not regard this place as happy. 770 is 'Photography'. The manufacture of 'photographic plates' is a technical process in the details of which one who practices photography (a division of 'Fine arts' in the Decimal Classification) is not directly interested

238 WALKER (James). Introduction to physical chemistry.

Colon Number

(2) E [P]:[S]

(4) E [Physical chemistry]:[Vacant ' ' diffuse]

(5) E [Physical chemistry]:[Vacant]

(6) E2

Decimal Number

(5) 541.3

(6) Co-extensiveness is reached

239 VAN'T HOFF (J. H.). Studies in chemical dynamics.

Colon Number

(4) E [Chemical dynamics]:[Vacant ' ' diffuse]

(5) E [Chemical dynamics]:[Vacant]

(6) E213

Decimal Number

(5) 541.39

(6) Co-extensiveness is reached

240 BONE (William A.). Flame and combustion in gases.

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Colon Number

- (4) E [Flame & combustion] : [Vacant '.' diffuse]
- (5) E [Flame & combustion] : [Vacant]
- (6) E2131

Decimal Number

- (5) 541.39
- (6) Co-extensiveness is not reached because not further subdivided

Exercise

1. For each of the titles 187—240
 - A. Write down the results at the stages 7 and 8 in the translation of the specific subject into Colon Number
 - B. Write down the results at the stages 7 and 8 in the translation of the specific subject into Decimal Number
2. For each of the titles 241—318
 - A. Translate the specific subject into Colon Number, showing the result at each stage
 - B. Translate the specific subject into Decimal Number, showing the result at each stage.

CHAPTER 25

MAIN CLASSES WITH DIFFERENTIAL FACETS

250 The facets presented by a specific subject belonging to any of the main classes listed in Rule 221 are **MUTUALLY INDEPENDENT** both among themselves and in their possible foci (divisions).

In other words: in these main classes the trains of characteristics used for classification are always the same and schedules of divisions based on them are quite independent of one another. The formula of characteristics is, therefore, single (without alternative) and there is only one schedule corresponding with each train of characteristics. The implications of this will become clearer when we presently consider main classes of which it is not true.

251 Specific subjects belonging to the following eight main classes may present **DIFFERENTIAL** facets *i.e.* their facets may be mutually dependent either among themselves or in their possible foci (divisions):

Colon No.	Main Class.	Decimal No.
D	Engineering	62
G	Biology	57
I	Botany	58
J	Agriculture	63
K	Zoology	59
L	Medicine	61
T	Education	37
Z	Law	34

MAIN CLASSES WITH DIFFERENTIAL FACETS

In other words: in these main classes the trains of characteristics used for classification are not always unvarying and/or the schedules of divisions based on a train of characteristics may be different for the different divisions based on a preceding one. Let us illustrate:

A specific subject in 'Medicine', may have a Problem Facet, some of the possible foci of which are 'State control of animals, as a measure of public health', 'State control of food and drinks, as a measure of public health', and 'Hygiene of clothing'. The divisions for the succeeding facet will have to be based on 'Animal' characteristic for the first, 'Substance' characteristic for the second and 'Material' characteristic for the third:

A specific subject in 'Engineering' may have a Work Facet and a Part Facet following it. Some of the possible foci of the former are 'Building', 'Motor car' and 'Steamer'. Each of these will admit of a Part Facet. But some of the possible foci in this will be 'Foundations', 'Floors', 'Walls', 'Roofs', 'Windows' and 'Doors' for the building, 'Wheels', 'Axles', 'Springs', 'Body', 'Hood' and 'Breaks' for the motor car, and 'Keel', 'Hull', 'Bridge', 'Funnel', 'Decks' and 'Deck-gear' for the steamer.

The formula of characteristics is, therefore, not single but takes many alternative forms (as in 'Medicine' above) and some trains of characteristics give rise to more than one schedule (as in 'Engineering'). The implications of this will become clearer when we presently consider each of the eight main classes listed in the rule.

252 In any main class, that facet which requires those that follow it to be differentiated according to its own several foci (divisions) is the DIFFERENTIATING FACET. Any facet so made to vary is a DIFFERENTIATED FACET.

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2521 If this differentiation merely demands different schedules for one and the same Differentiated Facet (to correspond with the several foci of the Differentiating Facet), the Differentiation and the Facets concerned are of the FIRST ORDER.

2522 If the differentiation demands different kinds of facets to correspond with the different foci of the Differentiating Facet, the Differentiation and the Facets concerned are of the SECOND ORDER.

The example from 'Medicine' given under Rule 251 is an instance of SECOND ORDER.

25523 A Differentiating Facet which is of the first order in some of its foci and of the second in others is of the THIRD ORDER.

The commentary on statement 222 has shown that, since, in the Decimal Classification, divisions based on different trains of characteristics are placed on a co-ordinate basis, all the facets of a specific subject cannot be represented in its Decimal Number. Multiple trains of characteristics and multiple facets are not, in fact, fully recognised and provided for in the Decimal Classification. None the less, analysing a specific subject into its facets will greatly help one, especially in difficult cases, to translate the ordinary names of subjects into their most exact Decimal Number.

Such analysis is done, however, with greater facility and thoroughness in terms of a scheme of classification in which trains of characteristics (and, therefore, of facets) are explicitly recognised and provided for by deliberate rules. And it will be easiest of all in a scheme the very structure of whose class numbers throws the different facets into clear relief

MAIN CLASSES WITH DIFFERENTIAL FACETS

The Colon Classification has these qualities. The individuality of every facet is fully recognised, each being provided with its own schedule. They are throughout precise in the rules of classification, in the schedules, in the formulæ of characteristics and in the class numbers. In dealing with the differential facets of the eight main classes in question we shall, therefore, make use of the terminology of Colon Classification but we must remember it is merely a formal convenience not at all essential.

253C' The following three rules are applicable to the Colon Classification.

253C1 When the Differentiation is of the First Order, the only precaution necessary, in translating from ordinary into Colon language, is to use at stages 5 and 6 of the procedure the PROPER SCHEDULE of the Differentiated Facet.

253C2 When the Differentiation is of the Second Order, the Differentiating Facet must first be taken by itself so far as it might be necessary towards stage 6 in order to determine the focus and (in case it is not vacant) the Differentiated Facet appropriate to that focus. After this the regular procedure must be followed starting from the very beginning, care being taken at stage 2 to write the correct formula of characteristics.

253C3 When the Differentiating Facet is of the Third Order, adopt the preliminary procedure laid down in Rule 233C2 to determine its focus, then follow the regular procedure from the very beginning doing as that focus requires.

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Beginners may be glad of an explanation at this stage.

When the first edition of the *Colon classification* was published in 1933, the idea of facets had not yet very clearly emerged and the formula of characteristics had not been thought of.

In the second edition of 1939 most of the chapters of 'Part 2 Schedules of Classification' were headed with formulae of characteristics, but not as thoroughly or consistently as is possible now that complete dissection has made the ruling ideas quite clear.

It is only the present probing into the facets and foci of classification, in fact, that has completely unearthed them. The third edition of the *Colon classification* will fully elaborate all the formulae of characteristics arising out of Facets-Analysis.

But while the second edition has still to be used as a companion to this book, the reader should enter the necessary amendments in his copy.

253D The procedure for the Decimal Classification needs no further amplification.

25D In the main class 'Engineering', for which the basic formula of characteristics is

$$D [W] : [P] : [E]$$

the Work Facet is the Differentiating one and it is of the Third Order.

25D0 There is a different set of schedules given for the Part Facet to correspond with the different foci of the Work Facet.

Note that the schedule of Part Divisions for the Work Division '6 Mechanical engineering' has not yet been published for want of sufficient experience.

MAIN CLASSES WITH DIFFERENTIAL FACETS

25D3 When the focus in the Work Facet is '3 Mining' an additional Facet must be inserted between the Work and Part Facets. It corresponds with the 'Substance' train of characteristics, the schedule for which is the same as in 'E Chemistry' and 'F Technology'. The formula of characteristics, then, becomes

D [3] [S]: [P]: [E]

Note that no colon occurs between [3] and [S] as the number '3' will never be subdivided.

Examples

The results are shown only at some of the stages of procedure.

319 BULMAN (II. F.). Working of coal and other stratified minerals etc.

Colon Number

Preliminary

(1) D (4) D ["Mining"]

Final

(4) D ["Mining"] [Coal, though multifocal]:
[Vacant " " multifocal] : [Vacant " " diffuse]

(5) D [Mining] [Coal] : [Vacant] : [Vacant]

(6) D3551

Decimal Number

(5) 622.33

(6) Co-extensiveness is reached

320 MIKUMO (E.), etc. Study of dry separation of coal with an inclined glass plate.

Colon Number

Preliminary

(1) D (4) ["Mining"]

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Final

- (4) D [" Mining "] [Coal] : [Study of dry separation with an inclined glass plate] : [Vacant ' ' diffuse]
- (5) D [Mining] [Coal] : [Jigging] : [Vacant]
- (6) D3551.25

Decimal Number

- (5) Either the Substance Facet or the Part Facet has to be ignored. The *Code for classifiers* has no rule on this point. We shall adopt the convention of ignoring the Part Facet. Then the number becomes 622.335
- (6) Co-extensiveness is not reached as the Part Facet has been ignored. The book has to be put into the same class as the preceding one though it deals only with a particular mode of ore-dressing in coal mining. Translating ' Rose ' into ' Flower ' due to poverty of language!

If the convention of ignoring the Substance Facet is adopted, the position will be no less difficult.

321 ISHIKAWA (T.). An investigation into the floatability of gold grains etc.

Colon Number

- (4) D [" Mining "] [Gold] : [An investigation of floatability of grain] : [Vacant ' ' diffuse]
- (5) D [Mining] [Gold] : [Washing] : [Vacant]
- (6) D3118.28

Decimal Number

- (5) 622.34 [Remarks as in the example 320]
- (6) Co-extensiveness has not been reached for two reasons:
 - (i) The number stands for ' Metals ' and it has not yet been subdivided;
 - (ii) The Part Facet has been ignored.

Note: The 14th edition has subdivided ' Metals ' and so we get the closer number 622.3421

MAIN CLASSES WITH DIFFERENTIAL FACETS

25D6 When the focus in the Work Facet is '6 Mechanical engineering', an additional Secondary Work Facet must be inserted between the Work and Part Facets and the formula of characteristics becomes

D [6—]: [S]: [P]: [E]

See Rules D60, D601, D602 and D603 of the *Colon classification*

Note further that this new Facet is also of the first kind i.e. different schedules are provided to fill it depending on the focus in the Work Facet

Examples

The results are shown only at certain stages.

322 LUCKIESH (M.). Artificial light

Colon Number

Preliminary (1) D (4) D ["Mechanical engineering"]

Final (4) D ["Mechanical engineering"] : [Artificial light] : [Vacant ∴ diffuse] : [Vacant ∴ diffuse]

(5) D [Mechanical engineering] : [Illumination] : [Vacant] : [Vacant]

(6) D6:5

Decimal Number

(5) 628.9

(6) Co-extensiveness has been reached. But the Canon of Context discloses that it is given a place under 'Sanitary engineering' which is not happy.

323 LEGROS (L A). Typecasting and composing machinery.

Colon Number

(4) D ["Mechanical engineering"] : [Typecasting and composing machinery] : [Vacant ∴ diffuse] : [Vacant ∴ diffuse]

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- (5) D [Mechanical engineering] : [Special machinery for typecasting and composing] : [Vacant] : [Vacant]

- (6) D6.9M14

Note the use of Subject Device in getting the number for this special machinery. Subject Device is described in Rules 66 and 661 of the *Colon classification*

Decimal Number

- (5) 655.2

- (6) Co-extensiveness is not reached as the number stands for the 'Process of type-casting and printing' as well as the machinery for the same.

Note that in a case like this, the engineer's services are required in putting up the machinery and maintaining it against major troubles. But the daily working and the elementary side of maintenance belongs to a non-engineer, the type-caster or composer as the case may be. The Colon and the Decimal Classifications choose different alternatives.

324 SYLVESTER (Cyril), etc. Modern electrical illumination.

Colon Number

- (4) D [Electrical] : [Modern illumination] : [Vacant : diffuse] : [Vacant : diffuse]

- (5) D [Electrical] : [Illumination] : [Vacant] : [Vacant]

- (6) D66.5

Decimal Number

- (5) 621.32

- (6) Co-extensiveness is reached

Note that in the Colon Number, the specific digit for 'Illumination' is '5' in this example as well as in example 323. But in the Decimal Number, there is no correspondence in the specific digits for illumination. The Colon Classification satisfies the Canon of Mnemonics

MAIN CLASSES WITH DIFFERENTIAL FACETS

whereas the Decimal Classification does not. Read about the Canon of Mnemonics in the *Prelogomena to library classification* (Pp. 120-139).

325 ARMSTRONG (Robert). A rudimentary treatise on steam boilers.

Colon Number

- (4) D [Steam] : [" Engine "] : [Boiler] : [Vacant
diffuse]
- (5) D [Steam engines] : [Generating engine] :
[Boiler] : [Vacant]
- (6) D64:121

Decimal Number

- (5) 621.194
- (6) Co-extensiveness is reached

Note that co-extensiveness is not reached in the Colon Number as the schedule of Part Divisions has not yet been worked out.

326 WESTCOTT (A. L.). A report of steam boiler trials under operating conditions.

Colon Number

- (4) D [Steam] : [" Engine "] : [Boiler] : [Report
on trials etc.]
- (5) D [Steam engineering] : [Engine] : [Boiler] :
[Testing]
- (6) D64:121:81

Decimal Number

- (5) 621 1947
- (6) Co-extensiveness is reached

Note that the Colon Number has not reached co-extensiveness as the schedule of Part Divisions has not yet been worked out.

327 Goss (William F.). Superheated steam in loco-motive service.

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Colon Number

- (4) D [Superheated Steam] : [Locomotive service] :
[Vacant ' ' diffuse] : [Vacant ' ' diffuse]
- (5) D [Steam engineering] : [Traction] : [Vacant] :
[Vacant]
- (6) D64:415

Decimal Number

- (5) 621.13
- (6) Co-extensiveness is reached

328 FRANCO (I.), *etc.* Internal combustion locomotives *etc.*

Colon Number

- (4) D [Internal combustion] : [Locomotives] :
[Vacant ' ' diffuse] : [Vacant ' ' diffuse]
- (5) D [Internal combustion engines] : [Traction] :
[Vacant] : [Vacant]
- (6) D646:415

Decimal Number

- (5) 621.4382
- (6) Co-extensiveness is reached

329 RIDER (John Hall). Electric traction.

Colon Number

- (4) D [Electric] : [Traction] : [Vacant ' ' diffuse] :
[Vacant ' ' diffuse]
- (5) D [Electrical engineering] : [Traction] :
[Vacant] : [Vacant]
- (6) D66:415

Decimal Number

- (5) D621.33
- (6) Co-extensiveness is reached

Note that observation of the Canon of Mnemonics by the Colon Classification and the failure in this respect by the Decimal Classification by comparing the specific digits for 'Locomotive' in examples 327, 328 and 329.

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330 JOLLEY (L. B. W.). Alternating current rectification and allied problems.

Colon Number

- (4) D [Alternating current] : [Rectification and allied problems] : [Vacant ' ' diffuse] : [Vacant ' ' diffuse]
- (5) D [Alternating current] : [Transformation] : [Vacant] : [Vacant]
- (6) D664:3

Decimal Number

- (5) 621.3143
- (6) Co-extensiveness is reached

25G In the main class 'G Biology' for which the basic formula of characteristics is

G [O] : [P]

the Problem Facet is the Differentiating one and it is of the Second Order.

25G33 When the focus in the Problem Facet is '33 Metabolism' or any of its subdivisions or 341 or 345 or 346, Substance Facet should be added after the Problem one and the formula of characteristics will be

G [O] : [P] : [S]

See Rule G233 of the *Colon classification*.

Examples

The results are shown only at some of the stages of the procedure.

331 BLOOD (Frank R.), etc. Metabolism of sulphur.

Colon Number

Preliminary

- (1) G (4) G [Vacant ' ' absent] : [Metabolism]

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Final

- (4) G [Vacant .: absent] : [Metabolism] :
[Sulphur]
- (5) G [Vacant] : [Metabolism] : [Sulphur]
- (6) G:33:161

Decimal Number

- (5) 574-13
- (6) Co-extensiveness is not reached as there is no provision for representing the Substance Facet, once again the case of naming the 'Rose' simply 'Flower' because of poverty of language

332 HODGE (Harold Carpenter), *etc.* Lipids of a fasting mouse.

Colon Number

Note that whatever the mouse may think, it has no place here. It is only selected to illustrate the process. If the mouse had refused, the rabbit would have taken its place with equal fitness.

- (4) G [Vacant .: absent] : [Fasting] : [Lipids]
- (5) G [Vacant] : [Fasting] : [Lipids]
- (6) G:346:94

Decimal Number

- (5) 612-3919
- (6) Co-extensiveness is not reached since there is no provision to represent the Substance Facet and 'Fasting' has to be translated, for want of a number of its own, as if it were 'Inanition'. Further, a book like this will be more in its place in the main class 'Biology' than 'Medicine'. But in the absence of a place in 'Biology', it has to be forced into 'Medicine'.

333 MACLACHLAN (P. L.), *etc.* The lipids and the adrenal gland in normal and fasting rabbits.

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Colon Number

- (4) G [Adrenal glands] : [“Metabolism” though multifocal] : [Lipids]
- (5) G [Suprarenal glands] : [Metabolism] : [Lipids]
- (6) G61:33:94

Decimal Number

- (5) Either the Substance Facet or the Organ Facet has to be ignored. But there is no ruling given in the *Code for classifiers*. We decide to ignore the Substance Facet. The number is then 612.45
- (6) Co-extensiveness is not reached since the Substance Facet is not represented. Further, this book will be more in its place in ‘Biology’. But in the absence of a place there, it has to be forcedly put in ‘Medicine’

23G5 When the focus in the Problem Facet is ‘5 Ecology’ or any of its subdivisions, Geographical Facet should be added after the Problem one and the formula of characteristics will be

G [O] : [5—] : [G]

See Rule G25 of the *Colon classification*.

Examples

The results are shown only at some of the stages of the procedure.

334 WELCH (Paul S.). *Limnology*.

Limnology = Ecology of lakes.

Colon Number

- (4) G [Vacant:absent] : [“Ecology”] : [“Lakes”]
- (5) G [Vacant] : [Ecology] : [Lakes]
- (6) G:5:19518

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Decimal Number

(5) 575-326324

(6) Co-extensiveness is reached

Note the instruction under 575.3 in the *Decimal classification*.

335 PENNACK (Robert W.). An introduction to the limnology of Northern Colorado.

Limnology = Ecology of lakes.

Colon Number

(4) G [Vacant ∴ absent] : [“ Ecology ”] :
[“ Lakes ” of Northern Colorado]

(5) G [Vacant] : [Ecology] : [Lakes of Northern Colorado]

(6) G:5:19518—73437

Note (1) the use of Auto-bias Device to individualise the lakes of a particular country [see Rule 6831 of the *Colon classification*]; and

(2) the application of Rule 34 of the same book to represent the northern part of an area.

Decimal Number

(5) 575-326324

(6) Co-extensiveness is not reached as there is no means of representing ‘ Northern Colorado ’

Note that Index Table 1 of the *Decimal classification* does not include ecology or any of its subdivisions in the illustrative list which may be divided geographically because the subdivisions of ‘ Ecology ’ and the geographical divisions cannot be distinguished from one another. If however we can assume that the number shown at stage 5 will not be ever divided on the basis of problem characteristic we may subdivide it by the Geographical Device and get the more co-extensive Decimal Number 575-326324788. But even now it is more extensive than the specific subject of the book which is confined only to North Colorado and does not extend to the whole of Colorado as the Number does.

MAIN CLASSES WITH DIFFERENTIAL FACETS

336 RASMUSSEN (D L) Biotic communities of the Kaabah plateau, Arizona.

Colon Number

- (4) G [Vacant : absent] [Biotic communities]:
[of the Kaabah plateau, Arizona]
- (5) G [Vacant] · [inter-relation] · [Kaabah plateau, Arizona]
- (6) G-56:73PK1

Note that the Kaabah plateau has been individualised on the analogy of mountains, rivers etc for which Rule 36 of the *Colon classification* provides

Decimal Number

- (5) 575 35
- (6) Co extensiveness is not reached since there is no provision to represent 'Kaabah plateau'

25I In the main class 'I Botany' for which the basic formula of characteristics is

I [N]: [P]

the Problem Facet is the Differentiating one and it is of the Second Order.

25I1 When the focus in the Problem Facet is '1 Preliminaries' or any of its subdivisions, Geographical Facet must be added after the Problem one and the formula of characteristics will be

I [N]: [1—]: [G]

Examples

The results are shown only at some of the stages of procedure.

337 RABENHORST (Ludovico). Flora Europaea algarum etc.

FACET-ANALYSIS

Colon Number

Preliminary

- (2) I [N] : [P]
- (4) I [Algarum] : [Flora]

Final

- (4) I [Algarum] : [Flora] : [Europaea]
- (5) I [Algae] : [National history] : [Europe]
- (6) I22:12:5

Decimal Number

- (5) 589.3
- (6) Co-extensiveness is not reached since the Geographical Facet is omitted.

Note that the Natural Group Facet or the Geographical Facet has to be omitted in the Decimal Classification. The note under 581.9 in the *Decimal classification* gives a definite direction that the latter should be ignored. The same direction is repeated in Rule 193 (b) of the *Code for classifiers*.

338 HARVEY (William Henry). *Phycologica Australica: a history of Australian seaweeds etc.* 5 V.

Colon Number

- (4) I [Sea weeds] : [History] : [Australian]
- (5) I [Algae] : [Natural history] : [Australia]
- (6) I22:12:8

Decimal Number

- (5) 589.3
- (6) Co-extensiveness is not reached since the Geographical Facet is omitted.

Note that the specific subjects of the books in this example and the preceding one are translated into the same Decimal Number. It is like translating 'Rose' and 'Lotus' both into 'Flower' because of poverty of language

339 ROBINSON (M. A. T.). *Representations of the British algae etc.* 2 V.

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Colon Number

- (4) I [Algae]: [Representations of the]: [British]
- (5) I [Algae] : [Pictures] : [Great Britain]
- (6) I22:14:3

Decimal Number

- (5) 589.3084
- (6) Co-extensiveness is not reached as the Geographical Facet is omitted

Note that the number for ' Pictures ' is taken from the ' Index table 2—Common subdivisions ' given at the end of the *Decimal classification*

25I33 When the focus in the Problem Facet is any of the ' subdivisions of ' 3 Physiology ' (but not itself merely) Substance and Organ Facets should, in this order, be added after the problem one. The formula of characteristics will be

I [N]: [3—]: [S]: [O]

Examples

The results are shown only at some of the stages of procedure.

340 STILES (Walter). Photosynthesis: the assimilation of carbon by green plants.

Colon Number

Preliminary

- (2) I [N] : [P]
- (4) I [Vacant : absent] : [Assimilation]

Final

- (4) I [Vacant: absent]: [Assimilation]: [Carbon]:
[Vacant : absent]
- (5) I [Vacant] : [Anabolism] : [Carbohydrates] :
[Vacant]
- (6) I:331:68

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Decimal Number

(5) 581.13352

(6) Co-extensiveness is reached

341 CHOLODNY (N.). Die Eisenbakterien. Beiträge zu einer Monographie.

Colon Number

(4) I [Bakterian] : [“ Katabolism ”] : [Eisen] :
[Vacant] : absent]

(5) I [Baeteria] : [Katabolism] : [Iron] : [Vacant]

(6) I21.332.182

Decimal Number

(5) 581.133545

(6) Co-extensiveness is not reached as the ‘Baeteria’ is not represented

342 FORMATION of carbohydrates in the seeds of flowering plants.

Colon Number

(4) I [Flowering plants] : [Formation] : [of Carbohydrates] : [in the seeds]

(5) I [Flowering plants] : [Anabolism] [Carbohydrates] : [Seeds]

(6) I5.331.68.178

Decimal Number

(5) 581.13352

(6) Co-extensiveness is not reached since (1) Natural Group Facet has been ignored; (2) Organ Facet has been ignored and (3) In the Substance Facet, it is only ‘Carbon’ and not ‘Carbohydrates’ that is represented

25I5 When the focus in the Problem Facet is ‘5 Ecology’ or any of its subdivisions, Geographical and Organ Facets should, in this

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order, be added after the Problem one. The formula of characteristics will be

$$I [N] : [5-] : [G] : [O]$$

Examples

The results are shown only at some of the stages of procedure.

343 CANNON (William Austin). Botanical features of the Algerian Sahara.

Colon Number

Preliminary

- (2) I [N] : [P]
- (4) I [Vacant ' ' diffuse] : [' Ecology ' ']

Final

- (4) I [Vacant ' ' diffuse] : [' Ecology ' '] : [Algerian Sahara] : [Vacant ' ' diffuse]
- (5) I [Vacant] : [Ecology] : [Deserts of Algeria] : [Vacant]
- (6) I:5:1911-677

Decimal Number

- (5) 581.52653
- (6) Co-extensiveness is not reached as 'Algeria' cannot be translated. The Geographical Device cannot be applied as in example 341 as the number for deserts is further divided in the *Decimal classification* on the basis of physiographical characteristics.

344 MACDOUGAL (Daniel Trembly). Botanical features of the North American deserts.

Colon Number

- (4) I [Vacant ' ' diffuse] : [' Ecology ' '] : [North American deserts] : [Vacant ' ' diffuse]
- (5) I [Vacant] : [Ecology] : [Deserts of North America] : [Vacant]
- (6) I:5:1911-71

FACET-ANALYSIS

Decimal Number

- (5) 581.52653
- (6) Co-extensiveness is not reached, the reason being similar to that for the preceding example

345 CANNON (William Austin). Topography of the chlorophyll apparatus in desert plants.

Colon Number

- (4) I [Vacant : diffuse] : ['Ecology'] : [Desert plants] : [Chlorophyll apparatus]
- (5) I [Vacant] : [Ecology] : [Desert] : [Chlorophyll apparatus]
- (6) I:5:1911:81

Note that to individualise 'Chlorophyll apparatus' which is part of '2 Digestive system' the digits 81 are added to 2 since 81 is mnemonic with 'Chlorophyll' as represented in the Substance Number 981 in Chapter 'E Chemistry' of Part 2 of the *Colon classification*

Decimal Number

- (5) 581.52653
- (6) Co-extensiveness is not reached as there is no provision to represent the Organ Facet.

Note that the different specific subjects in the examples 343, 344 and 345 are all translated into the same Decimal Number. Again it is like being obliged to translate 'Rose', 'Lotus' and 'Jasmine' all into the single word 'Flower' due to poverty of language

2517 When the focus in the Problem Facet is '2 Morphology' or '3 Physiology' or '4 Pathology' or '6 Phylogeny' or any of its subdivisions or '7 Ontogeny' or any of its subdivisions, Organ Facet should be added after the Problem one. The formula of characteristics will be

I [N] : [2 or 3 or 4 or 6— or 7—] : [O]

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Examples

The results are shown only at some of the stages of procedure.

346 BALLARD (C. W.). Elements of vegetable histology.

Colon Number

- (4) I [Vacant ' ' absent] : [" Morphology "] :
[" Tissues "]
- (5) I [Vacant] : [Morphology] : [Tissues]
- (6) I:2:12

Decimal Number

- (5) 581.8
- (6) Co-extensiveness is not strictly reached as the number stands for ' Histology and cytology '

347 KÜSTER (Ernest). Pathologie der Pflanzelle.

Colon Number

- (4) I [Vacant ' ' absent] : [Pathologie] : [Zelle]
- (5) I [Vacant] : [Pathology] : [Cell]
- (6) I:4:11

Decimal Number

- (5) 581.26
- (6) Co-extensiveness is reached

348 BRINK (R. A.), *etc.* Double fertilisation and the development of seed in angiosperms.

Colon Number

- (4) I [Angiosperms] : [Double fertilisation and development] : [Seed]
- (5) I [Phanerogams] : [Ontogeny] : [Seed]
- (6) I5:7:178

Decimal Number

- (5) 581.327

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- (6) Co-extensiveness is virtually reached, though there is no representation of the Natural Group Facet

25J In the main class 'J Agriculture' for which the basic formula of characteristics is

J [U] [P] [C]: [F]

the Farming Facet is the Differentiating one and it is of the Second Order.

See Chapter J of Parts 1 and 2 of the *Colon classification*. The latter gives at appropriate places in the body of the schedule the formulae of characteristics applicable to the different foci in the Farming Facet.

Examples

The results are shown only at some of the stages of procedure.

349 RAMANN (E.). Evolution and classification of soils.

Colon Number

Preliminary

(2) J [U] [P] [C] : [F]

(4) J [] [] [] : [Soil]

Final

(2) J [U] [P] [C] : [F] [N] : [O]

(4) [Vacant ' ' absent] [Vacant ' ' absent] [Vacant ' ' absent] : [Soil] [Vacant ' ' multifocal] : [Evolution and classification]

(5) J [Vacant] [Vacant] [Vacant] : [Soil] [Vacant] : [Classification]

(6) J:1:911

Decimal Number

(5) 631.44

(6) Co-extensiveness is reached

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350 SMITH (Erwin F.). Bacteria in relation to plant diseases. 3 V.

Colon Number

- (2) J [U] [P] [C] : [F] [D] : [O]
- (4) J [Vacant ∴ absent] [Vacant ∴ absent]
[Vacant ∴ absent] : [Diseases] [Bacteria]:
[Vacant ∴ diffuse]
- (5) J [Vacant] [Vacant] [Vacant] : [Control of
diseases etc.] [Bacterial] : [Vacant]
- (6) J:4I21

Decimal Number

- (5) 632.3
- (6) Co-extensiveness is reached

351 BACTERIAL diseases of food-plants.

Colon Number

- (4) J [Food] [Vacant ∴ diffuse] [Vacant ∴
diffuse] : [Diseases] [Bacterial] : [Vacant
∴ diffuse]
- (5) J [Human food] [Vacant] [Vacant]: [Control
of diseases etc.] [Bacterial] : [Vacant]
- (6) J3.4I21

Decimal Number

- (5) 632.3
- (6) Co-extensiveness is not reached as the Utility
Facet is not represented

352 POTATO scab.

Colon Number

- (4) J ["Human food"] ["Bulbs"] [Potato]:
["control of diseases etc."] [Scab] : [Vacant
∴ multifocal]
- (5) J [Human food] [Bulbs] [Potato] : [Control
of diseases etc.] [Bacterial] : [Vacant]
- (6) J321.4I21

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Decimal Number

(5) 632.3

(6) Co-extensiveness is not reached as the first three Facets are not represented

Note that the choice between representing the Crop Facets only and translating the name of this specific subject as 633.491 and representing the Farming Facets only as we have done is made for us already in the *Decimal classification* which can be seen by looking up the index for 'Potato-diseases'

353 BLODGETT (F. M.), *etc.* Factors influencing the occurrence of potato scab *etc.*

Colon Number

(4) [Human food] [Bulb] [Potato] : [Control of diseases *etc.*] [Scab] : [Factors influencing the occurrence]

(5) J [Human food] [Bulb] [Potato] : [Control of diseases *etc.*] [Scab] : [Etiology]

(6) J321:4121:2

Decimal Number

(5) 632.3

(6) Co-extensiveness is not reached as the first three and the last Facets are not represented

354 BASU (B. C.). Bordeaux mixture as a preventive of the potato [scab] disease.

Colon Number

(6) J321:4121:55

Decimal Number

(5) 632.3

(6) Co-extensiveness is not reached for the reasons stated in the preceding example.

Note that the names of the specific subjects of five examples, 350—354, have all to be translated into the same Decimal Number though they are all different. It is like having to translate 'Rose petal', 'Rose flower'.

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' Rose plant ', ' Flower plant ' and ' Plant '—all into the same word ' Plant ' on account of poverty of language

355 COLD storage of agriculture produce.

Colon Number

(6) J:7:84

Decimal Number

(5) 631.563

(6) Co-extensiveness is not reached since ' Storage ' has not been subdivided

356 COLD storage of fruits.

Colon Number

(6) J37:77:84

Decimal Number

(5) A note under ' 631.55 Harvesting ' in the *Decimal classification* directs that the Farming Facets should be ignored. Therefore, the Decimal Number is 634

(6) Co-extensiveness is not reached because of that

357 COLD storage of bananas.

Colon Number

(6) J374:77:84

Decimal Number

(5) 634.772

(6) Co-extensiveness is not reached as the Farming Facet has been ignored

358 REAPING of banana fruits.

Colon Number

(6) J374:77:2

Decimal Number

(5) 634.772

359 CLEANING of banana fruits.

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Colon Number

(6) J374:77:25

Decimal Number

(5) 634-772

360 GRADING of banana fruits.

Colon Number

(6) J374:77:3

Decimal Number

(5) 634-772

361 USES of banana fruit.

Colon Number

(6) J374:77:97

Decimal Number

(5) 634 772

362 USES of the banana plant.

Colon Number

(6) J374:7:97

Decimal Number

(5) 634 772

363 MADRAS. AGRICULTURE (Department of—). Cultivation of plantains on wet lands in the Godavari Delta

Colon Number

(6) J374

Decimal Number

(5) 634-772

Note that the differing specific subjects in examples 357—363 have all to be translated into the same Decimal Number, whereas they are translated into different and exact Colon Numbers.

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25K In the main class 'K Zoology' for which the basic formula of characteristics is

K [N]: [P]

the Problem Facet is the Differentiating one and it is of the Second Order.

The Differential Facets and their account are just similar to those in 'I Botany'.

25L In the main class 'L Medicine' for which the basic formula of characteristics is

L [O]: [P]

the Problem Facet is the Differentiating one and it is of the Second Order.

25L33 When the focus in the Problem Facet is any of the divisions of '3 Physiology' (but not itself merely) Substance Facet should be added after the Problem one and the formula of characteristics will be

L [O]: [3—]: [S]

Examples

The results are shown only at some of the stages of procedure.

364 LEVERTON (Ruth M.) Iron metabolism in human subjects on daily intakes of less than 5 mg.

Colon Number

- (4) L [Vacant : absent] : [Metabolism] : [Iron etc.]
- (5) L [Vacant] : [Metabolism] : [Iron]
- (6) L:33:182

Decimal Number

- (5) 612.01531

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- (6) Co-extensiveness is not reached as the substance 'Iron' is not individualised

25L4 When the focus in the Problem Facet is '4 Diseases' or any of its subdivisions, Handling Facet should be added after the Problem one and the formula of characteristics will be

L[O]:[4—]:[H]

See Rule L340 and its subdivisions of the *Colon classification*.

Examples

The results are shown only at some of the stages of procedure.

365 LAKSHMAN (Sharma K.). Fasting cure.

Colon Number

- (4) L [Vacant ' ' absent] : [' Diffuse '] : [Fasting cure]
- (5) L [Vacant] : [Diseases] : [Fast cure]
- (6) L:4:6426

Decimal Number

- (5) 615.854
- (6) Co-extensiveness is not reached since the number stands only for 'Food cure' and has not been subdivided to individualise 'Fast Cure'

366 HERTZLER (Arthur E.). Surgical pathology of the thyroid gland.

Colon Number

- (4) L [Thyroid gland] : [Surgical] : [Pathology]
- (5) L [Thyroid gland] . [Structural, neoplastic etc. diseases] : [Pathology]
- (6) L65:47:4

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Decimal Number

(5) 617.44

(6) Co-extensiveness is not reached as the Organ Facet is not subdivided to the necessary extent; it represents only 'Glandular system'

367 DIETRICH (Henry F.). [Etiology of] tetanus with special reference to childhood.

Colon Number

(5) L [Children - nervous system] : [Bacterial disease] : [Etiology]

(6) L9172.4241:2

Decimal Number

(5) 616.854

(6) Co-extensiveness is not reached since 'Children' and 'Etiology' are not represented

Note that the provision for representing, handling Facet is absent. If 'Children' be preferred and 'Tetanus' ignored, the number would be 618.92. But we adopt the convention that the latter number is to be used only for a general account of 'Pediatrics'.

25L522 When the focus in the Problem Facet is '522 State control of animals from public health point of view', Animal Facet should be added after the Problem one and the formula of characteristics will be

L [O] : [522] : [A]

See Rule L3522 of the *Colon classification*.

25L523 When the focus in the Problem Facet is any of the following subdivisions of '52 State control from public health point of view', '523 Foods, Drinks', '524 Intoxicants,

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Poisons', '526 Medicine', or is '573 Food from personal hygiene point of view', Substance characteristics should be added after the Problem one and the formula of characteristics will, respectively, be

L [O]: [523]: [S]

L [O]: [524]: [S]

L [O]: [526]: [S]

L [O]: [573]: [S]

See Rule L3523 of the *Colon classification*.

25L577 When the focus in the Problem Facet is '527 Clothing from the personal hygiene point of view' Material Facet should be added after the Problem one and the formula of characteristics will be

L [O]: [577]: [M]

See Rule L3577 of the *Colon classification*.

Examples

The results are shown only at some of the stages of procedure.

368 COLLINS (F. W.). Miscellaneous notes and queries on meat inspection.

Colon Number

(5) L [Vacant] : [State control] : [Meat]

(6) L:52:MK33073

Decimal Number

(5) 614.317

(6) Co-extensiveness is reached

369 ALAROID (W. B.) and KRISHNAN (B. G.). The defects of tapioca as a staple food.

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Colon Number

- (5) L [Vacant] : [Food] : [Tapioca]
- (6) L:573:J33T1

Decimal Number

- (5) 613.26
- (6) Co-extensiveness is not reached since 'Tapioca' is not reached in the Substance Facet

25L6 When the focus in the Problem Facet is '6 Pharmacognosy' or any of its subdivisions, Substance Facet should be added after the Problem one and the formula of characteristics will be

L [O] : [6—] : [S]

See Rule L36 of the *Colon Classification*

Examples

The results are shown only at some of the stages of procedure.

370 NEUBER (E). Pharmacology of gold preparations.

Colon Number

- (4) L [Vacant ' ' multilocal] : [Pharmacology] :
[of gold preparations]
- (5) L [Vacant] : [Pharmacology] : [Gold]
- (6) L:63:118

Decimal Number

- (5) 615.291
- (6) Co-extensiveness is reached

371 ROTH (G B.), etc. Effect of sulphate of sodium and magnesium on gastro-intestinal activity.

Colon Number

- (4) L [Gastro-intestinal activity] : [Effect] : [Sulphate of sodium, though multifocal]

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- (5) L [Digestive system] [Pharmacology] · [Salt of sodium and sulphur]

- (6) L2:63:411616

Decimal Number

- (5) 615-732

Note under '615 7 Medicine grouped by effects' in the *Decimal classification* directs that the Substance Facet should be ignored. The Decimal Number is, therefore, 615-732

- (6) Co-extensiveness is not reached as the Substance Facet is not represented

372 GELARIN (A J) Preparation of gold-sodium thiosulphate (better known as sanocrysin).

Colon Number

- (4) L [Vacant] · [absent] · [Preparation] · [of gold-sodium thiosulphate]

- (5) L [Vacant] : [Pharmacy] : [Salt of gold, sodium and sulphur (bivalent)]

- (6) L:68:41811612

Decimal Number

- (5) 615-4000191

- (6) Co-extensiveness is sought to be reached by the use of Relation Sign 0001 given in 'Table 2 Common subdivisions' at the end of the *Decimal classification* and yet it cannot be reached since the substance number can individualise only 'Gold' and not 'Sanocrysin'

25T In the main class 'T Education' for which the basic formula of characteristics is

T [E]: [P]

the Problem Facet is the Differentiating one and it is of the Second Order.

25T3 When the focus in the Problem Facet is '3 Teaching technique' or '4 Organisation'

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or ' 6 School building and furniture ' or any of their subdivisions, Subject Facet should be added after the Problem one and the formula of characteristics will be

T [E]: [3—]: [S]

T [E]: [4—]: [S]

T [E]: [6—]: [S]

Note that in the second edition of *Colon classification*, an extra facet is prescribed only when the focus is ' 4 Organisation ' and its subdivisions. When the focus is ' 3 Teaching technique ', the prescription is to divide it by the Subject Device. (See Rule T23). But experience has shown that the Canon of Hospitality (See *Prolegomena to library classification* Pp 106—117) will be better satisfied if the subject taught is given in a separate facet. This arrangement will give us freedom to subdivide ' 3 Teaching technique ' on the basis of the Technique employed. So also, when the focus is ' 6 Building and furniture ', a Subject Facet will increase the hospitality to individualise the special furniture needed for different subjects like ' Science ', ' Geography ', ' Drawing ' and so on.

Examples

The results are shown only at some of the stages of procedure

373 LENNEX (N. J.). Teaching of arithmetic.

Colon Number

- (4) T [“ Vacant ’. diffuse ’] : [Teaching] : [of arithmetic]
- (5) T [Vacant] : [Teaching technique] : [Arithmetic]
- (6) T:3:B1

Decimal Number

- (5) 375.511D
- (6) Co-extensiveness is reached

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Note the method of constructing this number is given in the note under '375.01—9 Subjects of study' in the *Decimal classification*. This place is given only as an alternative. Dewey himself would prefer 511.07. See note under 371.3

374 NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS. *New York*. COMMITTEE ON ARITHMETIC. Arithmetic in general education.

Colon Number

- (4) T [Vacant : diffuse] : ["Curriculum"] :
[Arithmetic]
- (5) T [Vacant] : [Curriculum] : [Arithmetic]
- (6) T:44:B1

Decimal Number

- (5) 375.511C
- (6) Co-extensiveness is reached

375 MORTON (Robert Lee). Teaching of arithmetic in the primary grades.

Colon Number

- (4) T [Primary grade] : [Teaching] : [of arithmetic]
- (5) T [Elementary education] : [Teaching technique] : [Arithmetic]
- (6) T15:3:B1

Decimal Number

- (5) We have to decide between 372.7 and 375.511D. As the former is a more special place and is co-extensive with the specific subject of the book, we prefer it

376 COURTIS (S. A.). Standard practice tests in arithmetic.

Colon Number

- (4) T ["Elementary education"] : [Standard practice tests] : [in arithmetic]

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- (5) T [Elementary education] : [Achievement tests] : [Arithmetic]

- (6) T15:472:B1

Decimal Number

- (5) 371-260001511

- (6) Co-extensiveness is not reached as the Educand Facet is unrepresented. The Subject Facet is represented in a forced way by the use of the 'Common subdivisions' given in Table 2 at the end of the *Decimal classification*

377 SHIBLI (J.). Recent developments in the teaching of algebra.

Colon Number

- (4) T ["Secondary education"] : [Recent developments in the teaching] : [of algebra]

- (5) T [Secondary education] : [Teaching technique] : [Algebra]

- (6) T2:3:B2

Decimal Number

- (5) 375-512D

- (6) Co-extensiveness is not reached since the 'Educand facet' is unrepresented

Note that there is an instruction under '375 Curriculum, course of study' in the *Decimal classification* that in cases like this, the Subject Facet is to be preferred and the Educand Facet is to be ignored—a forced and arbitrary discrimination necessitated by the poverty of the Decimal Language

378 UNIVERSITY OF MANCHESTER. Question papers in engineering.

Colon Number

- (4) T ["University education"] : [Question papers] : [in Engineering]

- (5) T [University education] : [Examination papers] : [Engineering]

- (6) T4:4751:D

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Decimal Number

(5) 371-26000162 or 620-761

(6) There is no direction as to which of these should be preferred. In either case co-extensiveness is not reached as the Educand Facet is unrepresented.

25Z In the main class 'Z Law' for which the basic formula of characteristics is

$\mathfrak{Z}[C]:[L]:[P]$

the Law Facet is the Differentiating one and it is of the first Order.

Note that in the Decimal Classification, the Problem Facet is omitted and that the Law Facet is provided only with divisions of the first order and not subdivided to reach co-extensiveness. There is provision however for the Community Facet. This is indicated in the note under '349 Law other than American and British' in the *Decimal classification*.

Exercise

1. For each of the books 319—378

A. Show the results at stages 7 and 8 for Colon Classification.

B. Show the results at stages 7 and 8 for the Decimal Classification.

2. For each of the books 379—537

A. Translate the specific subject into Colon Number showing the result at each stage of procedure

B. Translate the specific subject into Decimal Number showing the result at each of stage of procedure.

379 MOOR (C. G.). Tin mining etc.

380 McMILLAN (Earl Renwick). etc. Coal washing problems etc.

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381 FOSTER (C. L. N.). A treatise on ore and stone mining.

382 JOLLEY (L. B. W.), *etc.* The theory and design of illuminating engineering equipment.

383 KENNEDY (Rankin). The modern machine shop.
4 V.

384 HORNER (Joseph G.). Modern milling machines.

385 DAVEY (Henry). The principles, construction and application of pumping machinery.

386 MEAD (Daniel W.). Hydraulic machinery.

387 BUCCHETTI (J.). Engine tests and boiler efficiencies.

389 BOOTH (W. H.). Steam pipes.

390 STRICKLAND (F.). A manual of petrol motors and motor cars *etc.*

391 PARSELL (Henry V. A.), *etc.* Gas engine construction *etc.*

392 RUSHMORE (David B.), *etc.* Hydro-electric power stations *etc.*

393 COURSEY (Philip R.). Electrical condensers.

394 FLEMING (J. A.). Electric lamps and electric lighting.

395 WADDICOR (H.). Principles of electrical power transmission by alternating currents.

396 MOULLIN (E. B.). The theory and practice of radio frequency measurements.

397 SCOTT (Earl Dennis), *etc.* Side bands in frequency modulation.

398 DINSDALE (A.). First principles of television.

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- 399 MOSES (A. H.). Radio: beam and broadcast.
- 400 GUEST (M. Mason). Carbohydrate storage and mobilisation in the rat.
- 401 DEUEL (Harry J.), *etc.* Comparative rate of absorption of some natural fats.
- 402 MARRAZZI (Rose). The influence ... of fasting on the intestinal absorption of carbohydrates.
- 403 MANLY (Marian), *etc.* Distribution of injected phosphorus in bone and teeth of a dog *etc.*
- 404 GURWITSCH (Alexander) *etc.* Die mitogenetische Strahlung *etc.*
- 405 LINDEMAN (Verlus F.). Respiratory metabolism of the frog retina. [The O₂ consumption of the retina is studied].
- 406 NIEDHAM (James G.). Life of inland waters.
- 407 WESENBERG (C.). Plankton investigations of the Danish lakes.
- 408 KASILKAROV (D.), *etc.* Ecology of the cold desert of the central Tyan-Shan.
- 409 MUNDKUR (B. B.). Fungi of India [list].
- 410 LISTER (Arthur). Guide to the British mycetozoa.
- 411 COOKE (M. C.). Illustrations of British fungi (Hymenomycetes).
- 412 LIMPRICHT (K. Gustav). *Bearb.* Die Laubmoose, Deutschlands, Oesterreichs, und der Schweiz.
- 413 LORCH (Wilhelm). Anatomie der Laubmoose.
- 414 HOOKER (J. B.). Flora of British India. 7 V.

MAIN CLASSES WITH DIFFERENTIAL FACETS

415 FYSON (P. F) Flora of the Nilgiri and Palney hills.

416 FLEUR morphol , struct , biologie

417 SCHURHOFF (P. N) Die Zytologie der Blütenpflanzen

418 HOLCH (A E), etc. Root habits of certain plants of the foothill and alpine belts of Rocky Mountain etc

419 SEYBOLD (A), etc. Über die Blattpigmente der Alpenpflanzen.

420 CHAPMAN (V J) Studies in salt marsh ecology [of plants].

421 JOHNSTON (Ivan M) Gypsophily among Mexican desert plants

422 OGURA (Yudzuu) New examples of aerial roots in tropical swamp plants.

423 TOLSTAD (W L) Plant communities and secondary succession in south central South Dakota

424 WHELDALE (Muriel) Anthocyanin pigments of plants

425 Root development of plants.

426 MOTTIER (David M) Fecundation in plants

427 CLOUSTON (D). Lessons on Indian agriculture

428 FLICKER (S W) Soils how to handle and improve them.

429 GOKHALE (V. G) List of seeds available in the Agricultural College Farm, Poona.

430 BOURCART (E) Insecticides, fungicides and wood killers a practical manual on the diseases of plants and their remedies etc.

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431 CEYLON AGRICULTURE (Department of—) List of the fungi associated with diseases of cultivated plants in Ceylon.

432 ARNY (A. C.). Variations in the organic reserves in underground parts of five perennial weeds from late April to November.

433 THOMPSON (W. R.). Biological control of insect and plant pests etc.

434 INSTITUTE OF AGRICULTURAL ENGINEERING. *Oxford*. Preliminary report on an investigation into the artificial drying of crops in the stack.

435 BASU (B. C.) Preserving fodder for winter in the Khasi Hills.

436 RAMIAH (P. V.) South Indian fodders [Popular description].

437 COOK (Harold Thurston). Studies on the downy mildew of onions and the causal organism.

438 POPENOE (Wilson). Manual of tropical and sub-tropical fruits, excluding the banana, cocoanut, pine-apple, citrus fruits, olive, fig.

439 MADRAS AGRICULTURE (Department of—). Cultivation of grape vines.

440 WOOD (J. G.). Physiological derangements in vines subsequent to injury by cold.

441 PEDERSON (S.). Studies in the cold storage of grape juice.

442 CORBETT (G. H.). Insects of cocoanut in Malaya.

443 CORBETT (G. H.), *etc.* Insects, fungi and bacteria associated with copra in Malaya.

444 SUKUMARAN (K.). Animal life.

MAIN CLASSES WITH DIFFERENTIAL FACETS

445 PEARSE (A. S.), *etc.* Fauna of the caves of Yucatan

446 GUYER (Michael F.). Animal microbiology.

447 BENEDICT (Francis G.), *etc.* Lipogenesis in the animal body.

448 CLARKE (Eleanore L.). A second study of the iodine content of the blood of birds.

449 ELTON (Charles). Animal ecology.

450 MOON (H. P.). Aspects of the ecology of aquatic insects.

451 ZOLOKAREV (E. K.). Is there a locust reservation in the Volga-Kam dt ?

452 COWLES (R. B.). Observations on the winter activities of desert reptiles.

453 GLAZOV (N. A.). The ecological peculiarities of the Amu-Daria river flood-plain as regards its ornithofauna.

454 KENDRIGH (S. Charles). Birds of a prairie community.

455 MENON (M. G. K.). The Scyphomedusa of Madras and the neighbouring coast.

456 PADMANABHA AYYAR (R. S.). An account of the Oligochaeta of Travancore.

457 TIEGS (O. W.). Researches on the insect metamorphosis.

458 ANDERSON (R. M.). Methods of collecting and preserving vertebrate animals.

459 BEATTY (R. T.). Hearing in man and animals.

460 KINGSLEY (J. S.). The vertebrate skeleton from the developmental standpoint.

FACET-ANALYSIS

- 461 MOLLISON (Th.). *Phylogenie der Menschen.*
- 462 ROSSITER (Frederick M.). *Practical guide to health: a popular treatise of anatomy, physiology, and hygiene with a scientific description of diseases, their causes and treatment etc.*
- 463 STONE (J. E.). *Hospital organisation and management.*
- 464 HEWER (C. Langton). *Recent advances in anaesthesia and analgesia.*
- 465 MACKENZIE (W. Leslie). *Health and disease.*
- 466 PUGH (W. T. Gordon). *Practical nursing including hygiene and dietetics.*
- 467 CHAMBERLIN (E. Noble). *Symptoms and signs in clinical medicine.*
- 468 TYKON (James). *Guide to the practical examination of urine.*
- 469 SHERWOOD (Noble Pierce). *Immunology.*
- 470 HOUSTON (William R.). *Art of treatment.*
- 471 HOLZER (Wolfgang). *Foundations of short-wave therapy.*
- 472 HANDFIELD-JONES (R. M.), *etc.* *Essentials of modern surgery.*
- 473 BLACKHAM (Robert J.). *Indian manual of first aid.*
- 474 TOPLEY (W. W. C.), *etc.* *Principles of bacteriology and immunity.* 2 V.
- 475 BAYLIS (H. A.). *A manual of helminthology, medical and veterinary.*
- 476 DODGE (C. W.). *Medical mycology.*

MAIN CLASSES WITH DIFFERENTIAL FACETS

477 CENTRAL CONTROL BOARD (Liquor traffic). *Great Britain*. Alcohol: its action on the human organism.

478 CHOPRA (R. N.) Medical and economic aspects of some Indian medicinal plants.

479 DRINKER (Ceal K). Lymphatics, lymph and tissue fluid.

480 MAITLAND (John). Elephantiasis and allied disorders.

481 MITRA (A.). Bubonic plague.

482 INDIA. SANITARY COMMISSIONER. The etiology and epidemiology of plague.

483 HAITHINE (W. M.), *etc.* Serumtherapy of plague in India.

484 CHAPLIN (Henry Dwight), *etc.* Pediatrics.

485 ZAHORSKY (J.), *etc.* Pediatric nursing.

486 FLER (E.). Diagnosis of children's diseases etc.

487 EDWARDS (Harold Clifford). Surgical emergencies in children.

488 OWEN (Edmund). Surgical diseases of children. ¹.

489 LOVELL (Philip M.). Health of the child.

490 MANN (M. C. Corry). Diets for boys during school age.

491 OPPENHEIM (Nathan). Development of the child.

492 PRABHU (M. B.). Digestive disorders of infancy and childhood.

493 PRABHU (M. B.). Infantile cirrhosis of the liver.

494 ROLLESTON (Humphry). Some medical aspects of old age.

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- 495 MANSON (Patrick). Tropical diseases.
- 496 CAMBRIDGE EDUCATION COMMITTEE. Syllabus of religious education in [elementary] schools.
- 497 NATIONAL SOCIETY FOR THE SCIENTIFIC STUDY OF EDUCATION. *United States*. Course of study in history in the common school.
- 498 HOFFMAN (Moses N. H.) Measurement of bilingual background.
- 499 COLUMBIA RESEARCH BUREAU. Algebra test [for elementary schools].
- 500 BRANOM (M. E.). Measurement of achievement in geography [in elementary schools].
- 501 NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS. *United States*. Curriculum problems in teaching mathematics [in secondary schools].
- 502 JOINT COMMISSION OF THE MATHEMATICS ASSOCIATION OF AMERICA and THE NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS. *United States*. Place of mathematics in secondary education.
- 503 LEE (Chas. A.). Courses of studies in junior and senior high schools in social studies.
- 504 GERRY (Henry Lester). A test of high school chemistry.
- 505 BRINKLEY (Stirling G.). Values of new type examinations in the high school with special reference to history.
- 506 JOHNSON (Palmer O.). Curriculum problems in botany at college level.
- 507 SRINIVASAN (K.) University questions in history.
- 508 COOLEY (Anna M.). Teaching home economics.

MAIN CLASSES WITH DIFFERENTIAL FACETS

509 HINSDALE (B. A.). Teaching the language-arts: speech, reading, composition.

510 LONG (Charles R.). Aim and method of the reading lesson.

511 WESTWAY (F. W.). Teaching of English grammar etc.

512 FAUCETT (Lawrence). Teaching of English in the far east.

513 DAWSON (Edgar), *etc.* Teaching the social studies.

514 PATCH (Edith M.). First lessons in nature study, illustrated by Robert J. Sin.

515 CLARK (Elizabeth). Stories to tell and how to tell them.

516 GATES (Arthur I.). New methods in primary reading.

517 FIRTH (Cathrine B.). Learning of history in primary schools.

518 STERRETT (Carrie Belle). Texas High Schools: The teaching of high school English.

519 INCORPORATED ASSOCIATION OF ASSISTANT MASTERS IN SECONDARY SCHOOLS. *Great Britain*. Memorandum on the teaching of geography.

520 HURD (Arthur Willis). Problems of science teaching at the college level.

521 GUTZMANN (Hermann). Facial speech reading.

522 GREENE (James Sonnett), *etc.* Cause and cure of speech disorders.

FACET-ANALYSIS

523 LEAGUE OF NATIONS. ADVISORY COMMITTEE ON SOCIAL QUESTIONS. Study on the legal position of the illegitimate child.

524 FIELD (C. D.). Landholding and the relation of landlord and tenant in various countries.

525 WILCOX (Francis O.). Ratification of international conventions etc.

526 GILL (Torsten). International legislation etc.

527 POLITIS (Nicolas). Neutrality and peace.

528 DUTT (Samatul Chandra). Compulsory sales in British India.

529 FAWCETT (W. M.). Concise treatise on the law of landlord and tenant [in Great Britain].

530 CHESHIRE (G. C.). Private international law [in Great Britain].

531 ALLEN (E. W.). Positions of foreign states before German courts.

532 TAYLOR (W.). The American law of landlord and tenant.

533 MULLA (Dinshah Fardunji). Principles of Hindu law.

534 MAJUMDAR (Mahendra Chandra). The Hindu Wills Act.

535 SANKARARAMA SASTRI (V.). Fictions in the development of the Hindu law texts.

536 JAIN (Chapran Rai). Jain law.

537 BAILLIE (Neil B. E.). Tr. The Muhammadan law of sale according to the Huneefee code from the Futawa Alumgeeree etc.

CHAPTER 26

CANONICAL CLASSES

261 The following main classes have no facets and are therefore divided, in the first instance, into CANONICAL CLASSES not based on any train of characteristics:—

Colon No	Canonical Class	Decimal No.
1 to 9	Generalia	0
B	Mathematics	51, 52
C	Physics	53
H	Geology	548, 549, 55, 56
M	Useful arts	6
N	Fine Arts	7
R	Philosophy	1
Y	(Other) Social sciences	31, 36, 39

By 'Canonical Classes' we mean, of course, agreed branches of these subjects—for example, in Mathematics, arithmetic, algebra, analysis, trigonometry, geometry etc., in Fine arts, architecture, sculpture, painting, music, dance, etc.; in Philosophy, logic, epistemology, metaphysics, ethics, and aesthetics.

In Part 2 of the *Colon classification* the schedules for these main classes are not headed with a formula of characteristics: they begin with a list of canonical classes of the first order. Some of these admit of division on the basis of two or more trains of characteristics (that is, they present two or more facets) and they are therefore provided with a formula of characteristics. Further division of the canonical classes that have no facets are, of course, canonical.

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Among canonical classes of the second order, in the same way some present facets, others are further divided along canonical lines.

2610 In the main class 'Generalia' the following canonical classes of the first order admit of a formula of characteristics (*i.e.* of facet analysis) :—

Colon No.	Canonical Class	Decimal No.
1	Bibliography	01
2	Library science	02

The rest are not subjects but forms of exposition. They are, therefore, to be treated as the form or common subdivisions dealt with in Chapter 31.

261B1 In the main class 'B Mathematics', the following canonical classes of the first order admit of a formula of characteristics (*i.e.* of facet analysis) :—

Colon No.	Canonical Class	Decimal No.
B6	Geometry	513, 515, 516
B7	Mechanics	531, 532, 533
B9	Astronomy	52

The further divisions of the following are canonical ones :—

Colon No.	Canonical Class	Decimal No.
B1	Arithmetic	511
B2	Algebra	512, 519
B3, B4	Analysis	517
B5	Trigonometry	514
B8	Physico-mathematics	

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261B2 In the main class 'B Mathematics' the following canonical classes of the second order admit of a formula of characteristics (*i.e.* of facet analysis).

Colon No.	Canonical Class	Decimal No.
B13,	Theory of Numbers	512·81
B15, B16		
B23	Theory of equations	512·2, 512·3, 512·82
B25	Higher algebra	512·8
B33	Differential equations	517·38
B37	Real variable	517
B38	Complex variable	517·8

261B3 The following await to be fitted with formulae of characteristics:

Colon No	Canonical Class	Decimal No.
B27	Groups	
B29	Algebras	512·89
B34	Continuous groups	
B41-B48	Other Calculuses	517 + 517·7
B81-B85	Physico-mathematics	

For want of sufficient experience, their facets have not yet been worked out.

261C In the main class 'C Physics' the following canonical classes of the first order admit of a formula of characteristics (*i.e.* of facet analysis):—

Colon No.	Canonical Class.	Decimal No.
C2	Properties of matter	
C3	Sound	534

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Colon No.	Main Class	Decimal No.
C5	Light	535
C6	Electricity	537
C7	Magnetism	538

The further divisions of the following are canonical ones.

Colon No.	Canonical Class.	Decimal No.
C1	Preliminaries	
C4	Heat	536

261H In the main class 'H Geology' the following canonical classes of the first order admit of a formula of characteristics (*i.e.* of facet analysis) :—

Colon No.	Canonical Class.	Decimal No.
H1	Mineralogy	548, 549
H2	Petrology	52
H7	Economic geology	553

The further divisions of the following are canonical ones :—

Colon No.	Canonical Class.	Decimal No.
H3	Structural geology	551·9
H4	Dynamic geology	551·2, 551·3, 551·6, 551·9
H5	Stratigraphy	551·7
H6	Palaeontology	56

261M The main class 'M Useful arts' is a bundle of all conceivable applications of science and each canonical class will have to be fitted with an appropriate formula of characteristics, as literature accumulates on it.

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261N All the canonical classes of 'N Fine Arts' admit of formulae of characteristics (*i.e.* of facet analysis).

261R In the main class 'R Philosophy', the following canonical classes of the first order admit of a formula of characteristics (*i.e.* of facet analysis).

Colon No.	Canonical Class.	Decimal No.
R3	Metaphysics	11, 12
R4	Ethics	17

The further divisions of the following are canonical ones:—

Colon No.	Canonical Class.	Decimal No.
R1	Logic	16
R2	Epistemology	121
R5	Aesthetics	

261Y The main class 'Y (Other) social sciences' is in the formative stage and has got, as yet, only one canonical class 'Y1 Sociology' and this admits of a formula of characteristics (*i.e.* of facet analysis).

262C In the procedure for Colon Classification, write at stage 1 the number of the Canonical Class to which the specific subject belongs finding each successive digit by the METHOD OF TRIAL AND ERROR until co-extensiveness is reached or the schedule provides no further subdivision or a formula of characteristics is found provided. In the latter case, go through

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the other stages of procedure. In the two former cases, skip over stages 2 to 5 and state at stage 6 whether co-extensiveness is reached or not and go through stages 7 and 8.

262D The procedure for Decimal Classification needs no change.

Examples

The results are shown only at some of the stages of procedure.

538 SCHNEIDER (Georg). Theory and history of bibliography tr. by Ralph Robert Shaw.

Colon Number

- (1) 1
- (6) Co-extensiveness is reached

Decimal Number

- (5) 01
- (6) Co-extensiveness is reached

539 BRITISH MUSEUM LIBRARY. Catalogue of the Sanskrit manuscripts compiled by Cecil B. Dal.

Colon Number

- (1) 1 *Note* Bibliography No. is 3.
- (2) 1 [M] : [B] [L] : [G] : [C]
- (3) 1 [Material No.] : [Bibliography No.] [Language No.] : [Geographical No.] : [Chronological No.]
- (4) I [Manuscripts] : [" Publications in or dealing with a particular language "] [Sanskrit] : [" Great Britain "] : [" 1757 "]

- (6) 12:315:3:L57

Note (1) The Bibliography Facet is a Differential Facet of the Second order.

(2) The second paragraph of Rule 91231 of the *Colon classification* has been changed so that the

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Geographical and the Chronological Numbers together represent a library. This change will be printed in the third edition.

Decimal Number

- (5) 016-09100014912
- (6) Co-extensiveness is not reached because the fact that it is the catalogue of the collection in the British Museum Library is not represented. Even to represent the Language Facet a forced recourse to the use of the Table of Common Subdivisions at the end of the Decimal Classification had to be taken.

540 SMITH (C). Textbook of algebra.

Colon Number

- (1) B2
- (6) Co-extensiveness is reached

Decimal Number

- (5) 512
- (6) Co-extensiveness is reached

541 KLEIN (Felix). Lectures on the icosahedron and the solution of equations of the fifth degree tr. by George Gavin Morrice.

Colon Number

- (1) B23
- (2) B23 [E] : [P]
- (3) B23 [Equation No.] : [Problem No.]
- (5) B23 [Fifth degree] : [Formal solution]
- (6) B235 :5

Note that 'Fifth degree' is not found in the schedule; but it is the obvious mnemonic digit for it.

Decimal Number

- (5) 512-82
- (6) Co-extensiveness is not reached since the Equation Facet is totally unrepresented and the Problem Facet only partially represented.

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542 MUDGETT (Bruce D.) Statistical tables and graphs

Colon Number

- (1) B283
- (6) Co-extensiveness is reached

Decimal Number

- (5) 311.26
- (6) Co-extensiveness is reached.

Note that this number takes it to the main class 'Social sciences' which violates the Canons of Context and Helpful Order.

543 HOUSTON (R. A.). Treatise on light.

Colon Number

- (1) C5
- (2) C5 [W] : [P]
- (3) C5 [Wave length No.] : [Problem No.]
- (4) C5 [Vacant '.' absent] : [Vacant '.' multifocal]
- (5) C5 [Vacant] : [Vacant]
- (6) C5

Decimal Number

- (5) 535
- (6) Co-extensiveness is reached.

544 HOUSTON (R. A.). Note on the scattering of X-rays.

Colon Number

- (1) C5
- (5) C5 [X-rays] : [Scattering]
- (6) C53:58

Decimal Number

- (5) 537.53
- (6) Co-extensiveness is not reached because the Problem Facet is not represented.

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*Note that X-rays do not occur in the complete tables of the **Decimal classification**. It is the index that gives this number. Further, this number puts the book along with books on electricity, whereas, X-ray is now known to be a radiation. Thus the Canons of Currency, Context and Helpful Order are violated.*

515 FERRY (Ervin S), *etc.* Pyrometry.

Colon Number

- (1) C427
- (6) Co-extensiveness is reached.

Decimal Number

- (5) 536.52
- (6) Co-extensiveness is reached.

546 DANA (Edward Salisbury). A textbook of mineralogy with an extended treatise on crystallography and physical mineralogy ed. by William E. Ford.

Colon Number

- (1) H1
- (2) H1 [S] : [P]
- (3) H1 [Substance No.] : [Problem No.]
- (4) H1 [Vacant ' ' multifocal] : [Vacant multifocal]
- (5) H1 [Vacant] : [Vacant]
- (6) H1

Decimal Number

- (5) 549
- (6) This number is less extensive than the specific subject of the book which includes 'Crystallography' represented by 548. And yet the class inclusive of both has to be rejected as it is '54 Chemistry'

547 WILLIAMS (Alpheus F.). The genesis of diamond.

Colon Number

- (1) H1

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(4) H1 [Diamond] : [Genesis]

(6) H191:16

Decimal Number

(5) 549.2

(6) Co-extensiveness is not reached since the Problem Facet is omitted and even in the Substance Facet, the number represents only 'Native elements' which is more extensive than 'Diamonds', which, by the way, does not occur in the complete tables but is shown only in the index of the *Decimal classification*.

548 DAVISON (Charles). A manual of seismology.

Colon Number

(1) H4132

(6) Co-extensiveness is reached.

Decimal Number

(5) 551.2

(6) Co-extensiveness is reached.

549 AMBRONN (Richard). Elements of geophysics as applied to explorations for minerals, oil and gas, tr. by Margaret C. Cobb.

Colon Number

(1) H7

(2) H7 [S] : [P]

(3) H7 [Substance No.] : [Problem No.]

(4) H7 [Vacant : multifocal] : [Elements ... explorations]

(5) H7 [Vacant] : [Prospecting]

(6) H7:15

Decimal Number

(5) 622.12

(6) Co-extensiveness is reached. But it is doubtful if a book like this is more in its place in

CANONICAL CLASSES

'Mining engineering' or in 'Geology'.
Decimal Classification puts it in the former
and the Colon Classification, in the latter.

550 PROSPECTING for iron.

Colon Number

(5) H7 [Iron] : [Prospecting]

(6) H7182:15

Decimal Number

(5) 622.12

(6) Co-extensiveness is not reached since the Substance Facet is unrepresented

551 MEINZER (Oscar Edward). Outline of ground-water geology.

Colon Number

(4) H7 [Water] : [Vacant '.' multifocal]

(5) H7 [Basic oxide of hydrogen] : [Vacant]

(6) H7210

Decimal Number

(5) 553.7

(6) Co-extensiveness is reached.

552 RAMAIA (B.). Domestic science.

Colon Number

(1) M3

(6) Co-extensiveness is reached.

Decimal Number

(5) 64

(6) Co-extensiveness is reached.

553 WATERS (Henry Jackson). Animal husbandry.

Colon Number

(1) MK

(2) MK [U] [P] [A] : [V]

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- (3) MK [Utility No.] [Part No.] [Animal No.] :
[Veterinary No.]
- (4) MK [Vacant ∴ diffuse] [Vacant ∴ diffuse]
[Vacant ∴ multifocal] : [Vacant ∴ multi-
focal]
- (5) MK [Vacant] [Vacant] [Vacant] : [Vacant]
- (6) MK

Decimal Number

- (5) 636
- (6) Co-extensiveness is reached.

Note that the place of 'Animal husbandry' in the main class 'Agriculture' reminds us of the days when the former had not established independence.

554 LAZARUS (N. E.). Quality control of market milk etc.

Colon Number

- (1) MK The Veterinary Division is 'Produce'
- (4) MK ["Human food"] ["Secretion"] [Va-
cant ∴ multifocal] : ["Produce"] [of
market milk] : [Quality control]
- (5) MK [Human food] [Secretion] [Vacant] :
[Produce] [Secretion] : [Grading]
- (6) MK31:71:3

Note that the Veterinary Facet is a Differentiating Facet of the Second Order.

Decimal Number

- (5) 637.1276
- (6) Co-extensiveness is reached.

555 IMPERIAL COUNCIL OF AGRICULTURAL RESEARCH. India. Definition of characteristics of seven breeds of cattle of all India importance.

Colon Number

- (1) MK The Veterinary division is '912 Classi-
fication'

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- (5) MK [Cattle] [Vacant] [Vacant] : [Nomenclature etc.] [Natural history] : [India]
- (6) MK2:912:2

Note that the Veterinary Facet is a Differentiating Facet of the Second Order.

Decimal Number

- (5) 636-28
- (6) Co-extensiveness is not reached since 'India' is not individualised in the Geographical Facet. The digit merely stands for 'Other countries'

556 HARRISON (H. W.). The theory of pictorial art, a guide to the study of light, colour, line and composition.

Colon Number

- (1) N5
- (2) N5 [G] : [C] [M] : [F]
- (3) N5 [Geographical No.] : [Chronological No.] [Material No.] : [Figure No.]
- (4) N5 [Vacant] : [Vacant] : [Vacant] : [Vacant] : [Vacant] : [Vacant] : [Vacant] : [Vacant] : [Vacant] : [Vacant]
- (5) N5 [Vacant] : [Vacant] [Vacant] : [Vacant]
- (6) N5

Decimal Number

- (5) 75
- (6) Co-extensiveness is reached.

557 BROWN (Percy). Indian painting under the Moghals, 1550—1750.

Colon Number

- (4) N5 [India] : [Moghal] [Vacant] : [Vacant] : [Vacant] : [Vacant] : [Vacant] : [Vacant] : [Vacant] : [Vacant] : [Vacant]
- (5) N5 [India] : [15—] [Vacant] : [Vacant]
- (6) N52:J

Decimal Number

- (5) 759-954

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- (6) Co-extensiveness is not reached since 'Mogul Style' is not represented exactly in the Style Facet

558 **MOGHUL** fresco paintings of Hindu Pantheon.

Colon Number

- (5) N5 [India] : [15—] [Fresco] : [Hindu gods]
(6) N52:J3:Q2:3

Decimal Number

- (5) Either the Style Facet or the Figure Facet has to be ignored. Rule 236 of the *Code for classifiers* appears to favour ignoring the Figure Facet. The Decimal Number is, therefore, 759-954 the same as for the preceding example
(6) Co-extensiveness is not reached since the Material and the Figure Facets are unrepresented and even in the Style Facet, the style is not individualised

559 **LOSSKY** (N. O.). Intuitive basis of knowledge, an epistemological enquiry tr. by Nathalie A. Duddington etc.

Colon Number

- (1) R216
(6) Co-extensiveness is reached. No. 216 is not found in the schedule. But 6 is the mnemonic digit for intuition as can be seen from '76 Intuition' in the Problem Schedule of 'S Psychology'

Decimal Number

- (5) 121
(6) Co-extensiveness is not reached as '121' represents only epistemology.

560 **CONGER** (George Perrigo). A world of epitomisations, a study in the philosophy of sciences.

Colon Number

- (1) R3

CANONICAL CLASSES

- (2) R3 [V] : [S]
- (3) R3 [Point of View No.] : [Subject No.]
- (4) R3 [Vacant : diffuse] : [Sciences]
- (5) R3 [Vacant] : [Science]
- (6) R3:A

Decimal Number

- (5) 113
- (6) Co-extensiveness is reached.

561 HICKS (G. Dawes). Critical realism: studies in the philosophy of mind and nature.

Colon Number

- (4) R3 [Realism] : [Vacant : multifocal]
- (5) R3 [Realism] : [Vacant]
- (6) R325

Decimal Number

- (5) 149.2
- (6) Co-extensiveness is reached.

562 BINDER (Rudolph M.). Religion as man's completion, a socio-religious study.

Colon Number

- (4) R3 [Socio—: as man's completion] : [Religion]
- (5) R3 [Humanism] : [Religion]
- (6) R39Y:Q

Decimal Number

- (5) 201
- (6) Co-extensiveness is not reached since the Point of View Facet is not represented

Note that 'Philosophy of Religion' goes into Main Class 'Religion' and not 'Philosophy' in the Decimal Classification

563 DE BURGH (W. V.). From morality to religion.

Colon Number

- (1) R4

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- (2) R4 [P] : [C]
- (3) R4 [Problem No.] : [Controlling No.]
- (4) R4 [Vacant ∴ diffuse] : [Religion]
- (5) R4 [Vacant] : [Religion]
- (6) R4:Q

Decimal Number

- (5) 171-1
- (6) Co-extensiveness is reached.

564 BRUNNER (Emil). Divine imperative: a study in Christian morality tr. by Olive Vion.

Colon Number

- (5) R4 [Vacant] : [Christianity]
- (6) R4:Q6

Decimal Number

- (5) 171-1
- (6) Co-extensiveness is not reached since 'Christianity' is not individualised in the Controlling Facet

Note that the specific subject of this book and the preceding one has to be translated into the same Decimal Number, although one is narrower in scope than the other and indeed is a subclass of it. Again a case of being obliged to translate 'Rose' into 'Flower' on account of poverty of language

565 GINSBERG (Morris). Sociology.

Colon Number

- (1) Y1
- (2) Y1 [G] : [P] : [S] : [Gg.] : [C]
- (3) Y1 [Group No.] [Problem No.] : [Secondary Problem No.] : [Geographical No.] : [Chronological No.]
- (4) Y1 [Vacant ∴ diffuse] : [Vacant ∴ multifocal] : [Vacant ∴ multilocal] : [Vacant ∴ absent] : [Vacant ∴ absent]

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(5) Y1 [Vacant] : [Vacant] : [Vacant] : [Vacant] :
[Vacant]

(6) Y1

Decimal Number

(5) 301

(6) Co-extensiveness is reached.

566 MUKERJEE (Radhakamal). The regional balance of man.

Colon Number

(5) Y1 [Vacant] : [Population] : [Vacant] :
[Vacant] : [Vacant]

(6) Y1:5

Decimal Number

(5) 312

(6) Co-extensiveness is reached.

Note the utter of lack of filiatoriness involved in putting this book under ' 31 Statistics '.

567 ARYAN race.

Colon Number

(5) Y1 [Aryan race] : [Vacant] : [Vacant] :
[Vacant] : [Vacant]

(6) Y173P1

Decimal Number

(5) 572.891

(6) Co-extensiveness is reached.

568 NEGELEIN (Julius Von). Das Pferd im arischen Altertum.

Colon Number

(5) Y1 [Aryan race] : [Activity connected with
horse] : [Vacant] : [Vacant] : [Vacant]

(6) Y173P1:3MK442

Decimal Number

(5) 572.891

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- (6) Co-extensiveness is not reached since the Problem Facet is not represented

569 HOWELL (Fleming). Our Aryan ancestors: the world's historical people.

Colon Number

- (5) Y1 [Aryan race] : [Culture] : [Genetic study] :
[Vacant] : [Vacant]
(6) Y173P1:1:6

Decimal Number

- (5) 572.891
(6) Co-extensiveness is not reached since neither the Problem Facet nor the Secondary Problem Facet is represented

Note that the specific subjects of 567—569 all get the same Decimal Number though they vary widely in their extension.

570 DE GLAFERRI (Paul Louis). Feminine costumes of the world from the year 5318 B.C. to our century. 1928.

Colon Number

- (5) Y1 [Women] : [Costumes] : [Genetic study] :
[World] : [192—]
(6) Y115:88:6:1:N2

Decimal Number

- (5) 391.2
(6) Co-extensiveness is not reached as the idea of 'Genetic study' in the Secondary Problem Facet and the Geographical and the Chronological Facets are unrepresented

Exercise

- 1 For each of the books 538—570
 - A Give the results at stages 7 and 8 for the Colon Classification.
 - B Give the results at stages 7 and 8 for the Decimal Classification.

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2 For each of the books 571—654

A Translate the specific subject into Colon Number showing the result at each stage.

B Translate the specific subject into Decimal Number showing the result at each stage.

571 GRANT (Alexander). Catalogue of native publications in the Bombay Presidency upto 31st December, 1864.

572 DUFF (Edward Gordon), *etc.* Handlist of books printed by London printers, 1501—1556.

573 LOWNDEN (William Thomas). Bibliographer's manual of English literature [= books]. 1858-64.

574 VOULIN (H. de) La langue, la littérature et la cervivans anglais (a bibliography). 1917. [Read Rule 49 of the *Code for classifiers*.]

575 BEATON (D.) Bibliography of Gaelic books. 1923.

576 ACUFRECHT (Theodore). Catalogus catalogorum, an alphabetical catalogue of Sanskrit works and authors. 1891.

577 SARKIS (Joseph Elian). Dictionnaire encyclopedique de bibliographie Arabe. 1928.

578 MADRAS UNIVERSITY LIBRARY. Catalogue. [University founded in 1857.]

579 BRITISH MUSEUM LIBRARY. Subject index to modern works added to the library.

580 RANGANATHAN (S. R.) and SIVARAMAN (K. M.). Bibliography of reference books and bibliographies.

581 MAHONY (Bertha E.). Realms of gold in children's books.

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- 582 RANGANATHAN (S. R.). Five laws of library science.
- 583 Do. Prolegomena to library classification.
- 584 Do. Theory of library catalogue.
- 585 Do. Library administration.
- 586 Do. School and college libraries.
- 587 INGHAM (A. E.). Distribution of primary numbers [an analytical study.]
- 588 HOURSAT (Edouard). A course in mathematical analysis, V. 1, tr. by E. R. Hedrick.
- 589 LEFSCHITZ (Soloman). Topology.
- 590 ZIGMUND (Antoni). Trigonometric series.
- 591 WALSH (J. L.). Interpolation and approximation by rational functions in the complex domain.
- 592 BESICOVITCH (A. S.). Almost periodic functions.
- 593 THOMAS (Tracey Yerkes). Elementary theory of tensors.
- 594 ASKWITH (E. H.). Analytical geometry of the conic sections.
- 595 BLYTHE (W. H.). On models of cubic surfaces.
- 596 LAMB (Horace). Statics including hydrostatics etc.
- 597 LAMB (Horace). Dynamics [of solids.]
- 598 Do. Hydrodynamics.
- 599 WAVE functions.
- 600 PERRINE (Charles D.), etc. Determination of the solar parallax.
- 601 MITCHELL (S. A.). Eclipses of the sun,

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602 ADAMS (Walter S.), *etc.* An investigation of the rotation period of the sun.

603 PAYNE (Cecilia H.). Stellar atmospheres.

604 STARLING (S. G.). Mechanical properties of matter.

605 WYCKOFF (Ralph W. G.). Structure of crystals.

606 RÜCKER (A. W.). Liquid films.

607 MYERS (L. M.). Electron optics, theoretical and practical.

608 BERGMANN (Ludwig). Ultrasonics.

609 COBLENTZ (William W.). Investigations of infra-red spectrum.

610 KOHLRAUSCH (K. W. F.). Der Smekal—Raman-effekt.

611 RICHARDSON (O. W.). Emission of electricity from hot bodies.

612 FRENKEL (J.). Wave mechanics.

613 WILSON (B. D.), *etc.* Genesis and composition of peat deposit.

614 GEIKIE (James). Mountains: their origin, growth and decay.

615 ROMER (Alfred Sherwood). Vertebrate palaeontology.

616 ZITTEL (Karl Alfred von). Text-book of palaeontology—Mammalia.

617 COX (S. Herbert). Prospecting for minerals.

618 LOCKE (Augustus). Leached outcrops as guides to copper ores.

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619 DICKSON (Archibald A. C.). Mica minerals and prospector's guide.

620 MACFARLANE (John Muirhead). Fishes: the source of petroleum.

621 JEFFREYS (Harold). The earth, its origin, history and physical constitution.

622 KNECHT (Edmund), *etc.* Manual of dyeing.

623 AHMAD (Nazir) and VENKATARAMAN (V.). Empirical relationships between count, twist and strength of cotton yarns.

624 MARTIN (L. C.). Optical measuring instruments, their construction, theory and use.

625 MITCHELL (William). Skyways: book of modern aeronautics.

626 ARMSBY (Henry Prentiss). Nutrition of farm animals.

627 NYSTROM (A. B.), *etc.* Judging dairy cattle.

628 MATTICK (A. T. R.). Handling of milk and milk products.

629 BARGER (Edgar Hugh). Diseases and parasites of poultry.

630 POND (Irving K.). The meaning of architecture.

631 MARION (Herbert). Modern sculpture: its methods and ideals.

632 EMANUEL (Franklin L.). Etches and etching.

633 FIROZE FRAMJEE. English text-book on the theory and practice of Indian music.

634 GALPIN (Francis W.). A text-book of European musical instruments.

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- 635 DAS GUPTA (Hemendranath). Indian stage. 2 V.
- 636 VAN ZILLE. That marvel—the movie.
- 637 ROGERS (Arthur Kenyon). What is truth? An essay in the theory of knowledge.
- 638 USHAKO (A. P.). Philosophy of relativity.
- 639 IQBAL (Mohammad). Reconstruction of religious thought in Islam.
- 640 WEBB (Clement C. J.). Group theories of religion and the individual.
- 641 PHELPS (Harold A.). Principle and laws of sociology.
- 642 BULLOCK (Hilare). Crisis of our civilisation.
- 643 DAVISON (Ronald C.). British unemployment policy, the modern phase since 1930-1938.
- 644 SMITH (Bruce). The state police [United States]. 1926.
- 645 PITHAWALLA (M. B.). Climatic effect on life in Sind. 1937.
- 646 BARMAN (S.). The English Borstal system. 1934.
- 647 ANDRUS (J. Russell). Rural reconstruction in Burma. 1937.
- 648 KOISCHING (Walter M.). Unemployment in the learned professions, an international study and educational planning. 1937.
- 649 LANDTMAN (Guiner). Origin of the inequality of social classes.
- 650 IBBLISON (Danzil). Punjab castes etc. 1916.
- 651 KLINBLERG (Otto). Race differences.

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652 BRINTON (Daniel G.). The American race, a linguistic classification and ethnographic description of the native tribes of South and North America. 1935.

653 EVANS (Ivor H. N.). Papers on the ethnology and archaeology of Malay Peninsula. 1927.

654 STEGGERDA (Morris). Anthropometry of adult Maya Indians: a study of their physis and physiological characters. 1941.

263C If a specific subject belonging to any of the following main classes is expounded according to a special school of thought within its own limits, the main class may, in Colon Classification, be divided in the first instance by the CHRONOLOGICAL DEVICE:—

Colon No.	Main Class	Decimal No.
J	Agriculture	63
L	Medicine	61
S	Psychology	15
T	Education	37
X	Economics	33

In psychology for example we have the following schools of thought:—

Experimental	Individualistic
Psycho-analytic	Reflexology
Gestalt	Eidetic
Behaviouristic	Field

and so on

264C The Chronological Number used to individualise a special school of thought is

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worked out to ONE DIGIT in 'Agriculture' and 'Medicine' (in which special schools are found established only at intervals of centuries) and to THREE DIGITS in the others in which special schools of thought are found to be established more frequently. The century or year of the foundation of the school of thought is used as the epoch.

The Main Class Number amplified by the Chronological Number for the respective special schools of thought are listed at the ends of the schedules of the main classes concerned in the Part 2 of the *Colon classification*.

JA is given as the number for 'Forestry'. It is not, strictly, a school of agriculture; however, if agriculture is the art of exploiting the vegetable gifts of the earth, forestry antedates it, for forests had been exploited even from prehistoric times. That is why 'Forestry' is individualised by the addition of A (= Before 2000 B.C.).

LL for 'Homeopathy' is quite understandable as this system of medicine came into vogue in the eighteenth century. But LA for 'Ayurvedic system', LB for 'Siddha system' and LC for 'Unani' system have their chronological numbers fixed arbitrarily as the exact century of establishment of these schools of medicine is not known. Since the second edition of *Colon classification* was published, the new class 'LM Naturopathy' has been opened.

The second edition of the *Colon classification* gives the special schools of thought in 'T Education' as chronological subdivisions of the Problem Division 2. This was done before the idea in Rule 263C of this book had taken clear shape. The necessary alterations will be made in the third edition of the *Colon classification* to bring 'T Education' in line with the other main classes.

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The chronological divisions of 'S Psychology' and 'X Economics' are quite normal.

265C A main class digit to which a chronological number has been added is an AMPLIFIED MAIN CLASS NUMBER and the specific subject it represents is an AMPLIFIED MAIN CLASS.

266C An amplified main class may be subdivided exactly like its main class—canonically or by Facet Analysis as the case may be.

266D The Decimal Classification has no uniform method for dealing with special schools of thought; nor does it individualise all schools of thought. Again it has no automatic device to individualise future schools of thought. Further, a Decimal Number which represents a special school of thought in a subject cannot always be divided as the original subject itself.

Examples

The results are shown only at certain stages of procedure.

655 SCHLICH (W.). Manual of forestry. 3 V.

Colon Number

- (1) JA
- (2) JA [T] : [F]
- (3) JA [Tree Number] : [Farming Number]
- (4) JA [Vacant '.' multifocal] : [Vacant '.' multifocal]
- (5) JA [Vacant] : [Vacant]
- (6) JA

Decimal Number

- (5) 634.9

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- (6) Co-extensiveness is reached.

Note the unhappy, unhelpful position of 'Forestry' between '634 Fruits' and '635 Garden crops'.

656 UNITED STATES. NORTH PACIFIC DISTRICT FOREST SERVICE. Forest fire prevention handbook for the schools of Washington.

Colon Number

- (1) JA. The Farming Division is 'Control of diseases and injuries'
- (2) JA [T] : [F] [D] : [O]
- (5) JA [Vacant] : [Control of diseases and injuries] [Fire] : [Prevention]
- (6) JA:41:5

Decimal Number

- (5) 634.961115
- (6) Co-extensiveness is not reached since the Operation Facet is not represented

657 LUSHINGTON (A. W.). Madras timbers etc.

Colon Number

- (1) JA The Farming Division is 'Harvesting'
- (2) JA [T] : [F] [C] : [O] : [G]
- (5) JA [Vacant] : [Produce] [Timber] : [Natural history] : [Madras]
- (6) JA:74:912:2

Decimal Number

- (5) 634.927309548
- (6) Co-extensiveness is reached.

658 JYOTSNIKA Visha vaidya. [Treatment for poisons in Ayurveda.]

Colon Number

- (1) LA The Problem Division is 'Diseases'
- (2) LA [O] : [P] : [H]
- (5) LA [Vacant] : [Poison] : [Treatment]

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(6) LA:44:6

Decimal Number

(5) 615.89

(6) Co-extensiveness is not reached since (1) School of Medicine Facet is not individualised and (2) the Problem and the Handling Facets are not represented. In fact the Decimal Number 615.89 is to represent all 'Ancient and medieval remedies' whatever the system or organ or problem the book may treat about

659 MURUGESA MUDALIAR (K S). *Ed. Bāla vākatam* (Diseases of children) etc. [according to the Siddha System]

Colon Number

(5) LB91 [Vacant] : [Diseases] : [Vacant]

(6) LB91:4

Decimal Number

(5) 615.89

(6) Co-extensiveness is not reached.

See the remarks under the preceding example

660 HUNT (De Forest). *Homeopathic treatment of diphtheria* etc.

Colon Number

(5) LL [Nose] : [Bacterial disease] : [Treatment]

(6) LL41:4241:6

Decimal Number

(5) 615.53

(6) Co-extensiveness is not reached.

See the remarks under example 658.

661 LAWRENCE (D. H.). *Psycho-analysis and the unconscious.*

Colon Number

(2) SM95 [Entity] : [Problem]

•
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(5) SM95 [Vacant] : [Unconscious]

(6) SM95:815

Decimal Number

(5) 159-964

(6) Co-extensiveness is not reached since the Problem Facet is unrepresented

662 BARDON (Charles). Mind of the child: a psycho-analytical study.

Colon Number

(5) SM95 [Child] : [Vacant]

(6) SM951

Decimal Number

(5) 159-964

(6) Co-extensiveness is not reached since the Entity Facet is not represented

Note that this book and the preceding one get the same Decimal Number though they cover different specific subjects

663 WATSON (John B.). Psychology from the standpoint of a behaviourist.

Colon Number

(5) SN13 [Vacant] : [Vacant]

(6) SN13

Decimal Number

(5) 159-901943

(6) Co-extensiveness is reached.

664 MEAD (George H.). Mind, self and society from the standpoint of a social behaviourist ed. by Charles N. Morris.

Colon Number

(5) SN13 [Social] : [Vacant]

(6) SN138

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Decimal Number

- (5) 159-901943
- (6) Co-extensiveness is not reached since the Entity Facet is not represented

Note that this book gets the same Number as the preceding one although it is of narrower extension

665 BRAINERD (J. G.). *Ed.* Consumer's co-operation.

Colon Number

- (1) XM25
- (2) XM25 [B] : [E] : [G] : [C]
- (5) XM25 [Vacant] : [Vacant] : [Vacant] : [Vacant]
- (6) XM25

Decimal Number

- (5) 334
- (6) Co-extensiveness is reached.

666 STRICKLAND (C. F.). Co-operation in India: a student's manual. 1938.

Colon Number

- (5) XM25 [Vacant] : [Vacant] : [India] : [193---]
- (6) XM25 : : 2 : N3

Decimal Number

- (5) 334-0954
- (6) Co-extensiveness is not reached since the Chronological Facet is unrepresented

Note that the common subdivision 09 is defined under '334 Co-operation' in the *Decimal classification* as representing the local treatment of the subject as well as the history and the science of co-operation. This is another factor that detracts from co-extensiveness.

667 BAKKEN (Henry H.), *etc.* Economics of co-operative marketing.

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Colon Number

- (5) XM25 [Vacant] : [Marketing] : [Vacant] :
[Vacant]
- (6) XM25:51

Decimal Number

- (5) 380.125
- (6) Co-extensiveness is reached.

Note that this number emphasises the affiliation of the specific subject of this book with 'Marketing' rather than with 'Co-operation' and puts it, therefore, with books on 'Marketing' and not with those on 'Co-operation'.

668 AGRICULTURAL co-operation

Colon Number

- (5) XM25 [Agricultural economics] : [Vacant] :
[Vacant] : [Vacant]
- (6) , XM259J

Decimal Number

- (5) 334.683
- (6) Co-extensiveness is reached

Note that before the 1942 edition of the Decimal Classification appeared directing the construction of this number by the Subject Device, one had to use Common Subdivision Device and build the number 334.000163

669 WHITL (Henry F.). Co-operative marketing of farm-products in the United States. 1937.

Colon Number

- (5) XM25 [Agricultural economics] : [Marketing] :
[United States] : [193—]
- (6) XM259J:51:73:N3

Decimal Number

- (5) 338 140973
- (6) Co-extensiveness is not reached since the Co-operation Facet and the Chronological Facet are missed

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Exercise

- 1 For each of the books in 655—669
 - A Give the results at stages 7 and 8 for the Colon Classification
 - B Give the results at stages 7 and 8 for the Decimal Classification
 - 2 For each of the books 670—693
 - A Translate the specific subject into Colon Number showing the result at each stage of procedure
 - B Translate the specific subject into Decimal Number showing the result at each stage of procedure
- 670 ROMELL (L. G.). Ecological problems of the humus layer in the forest.
- 671 HARTIG (R.). Text-book of the diseases of trees tr. by William Somerville etc.
- 672 STEBBING (E. P.). Departmental notes on insects that affect forestry.
- 673 GAYER (Karl). Forest utilisation by W. R. Fisher.
- 674 CUMMINS (J. E.). Preventive treatment of fence posts.
- 675 BOURNE (R.). Method of preparing volume and money yields for teak woods.
- 676 SUNDARAM (A. R. S.). Hindu pharmacopoeia [Ayurveda].
- 677 RAMAMURTI AYYAR (T. G.). Handbook of Indian Medicine or the gems of Siddha system.
- 678 GHULAM JULANI (K.). [Unani] materia medica, pharmacy and pharmacology.

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679 ALLEN (Timothy Field). Primer of materia medica for practitioners of homoeopathy.

680 KIPPEX (John R.). Handbook of the diseases of the skin and their homoeopathic treatment.

681 KAMESWARA SARMA (L.). Drugless healing. [Naturopathy].

682 EBBINGHAUS (Hermann). Memory: a contribution to experimental psychology tr. by Henry A. Rugel.

683 THURSTON (L. L.) [Psycho-analysis] of the nature of intelligence.

684 WEXBERG (Erwin). Individual psychology and sex.

685 PILLAI (G. R.). Co-operation in Indian States. 1934.

686 JONES (Benjamin) Co-operative production.

687 WOLFF (Henry W.). Co-operative banking.

688 BROWN (Robert G.). How to use a building society.

689 STRICKLAND (C. R.). Rural finance and co-operation [in China]. 1934.

690 GATLIN (George O.). Co-operative marketing of cotton [in the United States]. 1926.

691 GORE-BROWNE (Francis). Handbook on the formation, management and winding up of joint-stock companies [in Great Britain]. 1930.

692 WATERMAN (Marwin H.). Public utility financing [in the United States], 1930—1935.

693 ALBAN (Frederick J.). Organisation and administration of water-works in Great Britain. 1926.

PART 3

PHASE-ANALYSIS

CHAPTER 30

CLASSES WITH TWO PHASES

300 A specific subject is **ONE-PHASED** when it involves only a single main class or any of its subclasses (with or without facets) and when it is expressed in the form usual for it.

All the specific subjects so far given as examples or exercises are one-phased.

301 A specific subject is **TWO-PHASED** with the secondary phase of the **FIRST SPECIES**, when it involves a main class or any of its subclasses (with or without facets) and when it is expressed in a form scheduled in Chapter 2 "Common subdivisions" of Part 2 of the *Colon classification* or under "0 Form subdivisions" and 0003 and its subdivisions under "000 Miscellaneous Common subdivisions" in Table 2 "Common subdivisions" of the *Decimal classification*. The main class or the subclass as the case may be is called the **PRIMARY** phase, the common subdivision **SECONDARY**.

To decide the secondary phase in the following examples the schedule of common subdivisions should be scanned and the appropriate subdivision determined by trial and error. The subdivision should be named by

CLASSES WITH TWO PHASES

the standard term given in the schedule and not by its equivalent found in the title of the book. After some practice it will be easy to recognise readily the secondary phase of the first species and to spot out the appropriate common subdivision.

Examples

694 HALSBURY (*Lord*). Laws of England [alphabetically arranged].

The specific subject of this book is two-phased. The primary phase belongs to the main class 'Law' and is the subclass 'British Law'. The secondary phase is the common subdivision 'Encyclopaedia' and is, therefore, of the first species.

695 WIRELESS world and radio review.

The specific subject of this book is two-phased. The primary phase belongs to the main class 'Engineering' and is the subclass 'Broadcasting'. The secondary phase is the common subdivision 'Periodical' and is, therefore, of the first species.

696 EMPIRE social hygiene yearbook.

The specific subject of this book is two-phased. The primary phase belongs to the Main Class 'Sociology' and is the subclass 'Social evil'. The secondary phase is the common subdivision 'Yearbook' and is, therefore, of the first species.

697 CONGRESS OF THE UNIVERSITIES OF THE EMPIRE. Report of proceedings. [First Conference, 1912].

The specific subject of this book is two-phased. The primary phase belongs to the Main Class 'Education' and is the subclass 'University education'. The secondary phase is the common subdivision 'Congresses' and is, therefore, of the first species.

698 LEAGUE OF NATIONS. COMMITTEE OF STATISTICAL EXPERTS. Timber statistics, minimum programme of timber statistics.

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The specific subject of this book is two-phased. The primary phase belongs to the Main Class 'Forestry' and is the subclass 'Timber'. The secondary phase is the common subdivision 'Statistics' and is, therefore, of the first species.

699 HERLITZ (Lester B.), *etc.* Personnel and financial statistics of school organisations serving rural children in the United States. 1938.

The specific subject of this book is two-phased. The primary phase belongs to the Main Class 'Education' and is the subclass 'Rural Education'. The secondary phase is the common subdivision 'Statistics' and is, therefore, of the first species.

700 HUXLEY (Leonard). Life and letters of Thomas Henry Huxley [b. 1825].

The specific subject of this book is two-phased. The primary phase is the Main Class 'Biology'. The secondary phase is the common subdivision 'Biography' and is, therefore, of the first species.

701 GOETHE (Johann Wolfgang von). *Sauntliche Werke.* [b. 1749.]

The specific subject of this book is two-phased. The primary phase belongs to the Main Class 'Literature' and is the subclass 'Goethe, the German poet'. The secondary phase is the common subdivision 'Collections' and is, therefore, of the first species.

702 SRIRAMULU (V.). Specimens of Sanskrit dramatic poems. [The youngest author included was born in the 800's].

The specific subject of this book is two-phased. The primary phase belongs to the Main Class 'Literature' and is the subclass 'Sanskrit drama'. The secondary phase is the common subdivision 'Selections' and is, therefore, of the first species.

703 RAMANUJAN (S.). [b. 1887]. Collected papers ed. by (t. H. Hardy *etc.*

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The specific subject of this book is two-phased. The primary phase is the Main Class 'Mathematics'. The secondary phase is the common subdivision 'Collections' and is, therefore, of the first species.

704 BORING (Edwin Garrigues), *ctq.* Manual of psychological experiments.

The specific subject of this book is two-phased. The primary phase is the Main Class 'Psychology'. The secondary phase is the common subdivision 'Experimental work' and is, therefore, of the first species.

705 STAMP (Josiah). We live and learn: addresses on education.

The specific subject of this book is two-phased. The primary phase is the Main Class 'Education'. The secondary phase is the common subdivision 'Lectures' and is, therefore, of the first species.

706 PLANT (Arnold). *Ed.* Some modern business problems: a series of studies.

The specific subject of this book is two-phased. The primary phase is the Main Class 'Economics'. The secondary phase is the common subdivision 'Symposia' and is, therefore, of the first species.

707 SMITH (David Nichol). Some observations on the eighteenth century [English] poetry.

The specific subject of this book is two-phased. The primary phase belongs to the Main Class 'Literature' and is the sub-class 'English poetry'. The secondary phase is the common subdivision 'Criticism' and is, therefore, of the first species.

708 MICHELSON (A. A.). Light waves and their uses.

The specific subject of this book is two-phased. The primary phase belongs to the Main Class 'Physics' and is the subclass 'Light'. The secondary phase is the common subdivision 'Application' and is, therefore, of the first species.

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709 BROMWICH (T. J. I. A.). Elementary integrals: a short table.

The specific subject of this book is two-phased. The primary phase belongs to the Main Class 'Mathematics' and is the subclass 'Integral calculus'. The secondary phase is the common subdivision 'Tables' and is, therefore, of the first species.

710 PHILIP (George), *etc.* World atlas. 1938.

The specific subject of this book is two-phased. The primary phase belongs to the Main Class 'Geography' and is the subclass 'World geography'. The secondary phase is the common subdivision 'Atlas' and is, therefore, of the first species.

711 INDIA. PUBLIC WORKS (Department of—). Public Works Department code.

The specific subject of this book is two-phased. The primary phase is the Main Class 'Engineering'. The secondary phase is the common subdivision 'Code' and is, therefore, of the first species.

712 SPARY (V. C.). Modern geography room.

The specific subject of this book is two-phased. The primary phase is the Main Class 'Geography'. The secondary phase is the common subdivision 'Laboratories' and is, therefore, of the first species.

713 ADE (Lester K.). Educational standards for teachers in Pennsylvania. 1939.

The specific subject of this book is two-phased. The primary phase is the Main Class 'Education'. The secondary phase is the common subdivision 'Educational qualification for a profession' and is, therefore, of the first species.

714 SIAM. INSTRUCTION (Ministry of Public—). Report, 1932/33.

The specific subject of this book is two-phased. The primary phase is the Main Class 'Education'. The

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secondary phase is the common subdivision 'Governmental reports', and is, therefore, of the first species.

715 GREAT BRITAIN. ROYAL COMMISSION ON THE SUPERIOR CIVIL SERVICES IN INDIA. 1923. Report.

The specific subject of this book is two-phased. The primary phase belongs to the Main Class 'History' and is the subclass 'Indian Civil Service'. The secondary phase is the common subdivision 'Commission' and is, therefore, of the first species.

Note: In the Decimal Classification the primary phase of this book belongs to the class 'Administration' and is the subclass 'Organisation of civil service'.

716 DEUTSCHEN TILFSEE EXPEDITION. 1898-99. Wissenschaftliche Ergebnisse.

The specific subject of this book is two-phased. The primary phase is the Main Class 'Biology'. The secondary phase is the common subdivision 'Expedition' and is, therefore, of the first species.

Note:—In the Decimal Classification, the primary phase is the Main Class 'Science (general)'.

717 ROYAL SOCIETY OF LONDON. Catalogue of scientific papers, 1800-1900.

The specific subject of this book is two-phased. The primary phase is the Main Class 'Science (general)'. The secondary phase is the common subdivision 'Bibliography' and is, therefore, of the first species.

Note: In the Decimal Classification, 'Bibliography' does not find a place in the schedule of common subdivisions. The canonical division 'Bibliography' of the Main Class 'Generalia' is made to accommodate not only bibliographies of general scope but also those of specific subjects, though this violates the Canon of Context. The specific subject of the book given in this example has, therefore, to be deemed to be only one-phased in the Decimal Classification.

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718 **ARMY MEDICAL LIBRARY.** *United States.* [Founded 1836]. Index catalogue of the library of the Surgeon-General's Office.

The specific subject of this book is two-phased. The primary phase is the Main Class 'Medicine'. The secondary phase is the common subdivision 'Bibliography' and is, therefore, of the first species.

Note: The remark in the note to the preceding example applies to this book also.

719 **MAXWELL** (James Clark). *Did.* A commemoration volume, 1831-1931.

The specific subject of this book is two-phased. The primary phase is the Main Class 'Physics'. The secondary phase is the common subdivision 'Memorial volumes' and is, therefore, of the first species.

Note: In the Decimal Classification, 'Memorial volumes' does not find a place in the schedule of common subdivisions. The specific subject of books of this nature has, therefore, to be deemed to be one-phased.

720 **RUTLAND** (William R.). Thomas Hardy [b. 1840] a study of his writings and their background.

The specific subject of this book is two-phased. The primary phase belongs to the Main Class 'Literature' and is the subclass 'Thomas Hardy'. The secondary phase is the common subdivision 'Criticism' and is, therefore, of the first species.

Note: In the Decimal Classification, there is no suitable means of representing this secondary phase. The specific subject has, therefore, to be deemed to be one-phased.

3011 If the title of a book is **ELLIPTICAL** as regards the secondary phase, but the ellipsis is remedied by what the title implies, to derive the specific subject in its full form add the words implied.

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Examples

721 TURNBULL (H. W.). The great mathematicians [The youngest mathematician included is Ramanujan born in 1880's].

The specific subject of this book is 'Biographies of the great mathematicians'. It is got by prefixing the words 'Biography of ' to the title and thereby remedying the ellipsis. It is two-phased with 'Mathematics' for the primary phase. The secondary phase is the common subdivision 'Biography' and is, therefore, of the first species.

722 SPEARMAN (C.). Psychology down the ages. 2 V. 1937.

The ellipsis in this title may be removed by prefixing the words 'History of '. The specific subject in its full form is then 'History of psychology down the ages' and it is two-phased with the Main Class 'Psychology' as its primary phase. The secondary phase is the common subdivision 'History' and is, therefore, of the first species.

723 SMITH (James Perrin). Lower triassic ammonoidea of North America.

The ellipsis in this title is removed by prefixing the words 'Survey of the '. The specific subject in its full form is then 'Survey of the triassic ammonoidea of North America'. It is two-phased. The primary phase belongs to the Main Class 'Geology' and is the subclass 'Palaeontology of prosobranchiata'. The secondary phase is the common subdivision 'Surveys' and is, therefore, of the first species.

724 BADEN-POWELL (B. II.). Forest system of British Burma [in the 1870's].

The ellipsis in this title is removed by prefixing the words 'Descriptive account of the ' and its specific subject is two-phased. The primary phase is the subclass 'Forestry'. The secondary phase is the common subdivision 'Descriptive account' and is, therefore, of the first species.

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725 ROBERTS (Michael). *Ed.* New country: prose and poetry by the authors of new signatures. [The youngest author included was born in the 1890's].

The ellipsis in this title is removed by inserting 'Selections from' between 'country' and 'prose'. The specific subject thus got in its full form is two-phased. The primary phase belongs to the Main Class 'Literature' and is the subclass 'English literature'. The secondary phase is the common subdivision 'Selections' and is, therefore, of the first species.

726 POWERS (Francis F.), *etc.* Successful methods of teaching English to bilingual children in Seattle public schools.

The ellipsis in this title is removed by adding at the end '—a case study'. The specific subject thus got in its full form is two-phased. The primary phase belongs to the Main Class 'Education' and is the subclass 'Technique for teaching modern languages in elementary schools'. The secondary phase is the common subdivision 'Case study' and is, therefore, of the first species.

727 SMYTH (Ethel). Maurice Baring. [b. 1874].

The ellipsis in this title is removed by adding at the end 'A criticism'. The specific subject thus got in its full form is two-phased. The primary phase belongs to the Main Class 'Literature' and is the subclass 'Maurice Baring'. The secondary phase is the common subdivision 'Criticism' and is, therefore, of the first species.

Note: In the Decimal Classification, this secondary phase cannot be represented and this specific subject should, therefore, be deemed to be one-phased.

728 SEN (Sris Chandra). Mystic philosophy of the Upanishads.

The ellipsis in this title is removed by adding at the end 'A criticism'. The specific subject thus got in its full form is two-phased. The primary phase belongs to the Main Class 'Philosophy' and is the subclass 'Upanishads' (which is one of the basic texts of

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Vedanta-philosophy). The secondary phase is the common subdivision 'Criticism' and is, therefore, of the first species.

Note: In the Decimal Classification, this secondary phase cannot be represented and this specific subject should, therefore, be deemed to be one-phased.

729 EDMAN (Irwin). The mind of Paul.

'The mind of' should be taken, to be equivalent to 'Criticism of the epistles'. The subject thus got is two-phased. The primary phase is the Main Class 'Religion' and is the subclass 'Epistles of St. Paul'. The secondary phase is the common subdivision 'Criticism' and is, therefore, of the first species.

Note: In the Decimal Classification, the secondary phase cannot be represented and the specific subject should, therefore, be deemed to be one-phased.

302 A specific subject is Two-PHASED with the secondary phase of the SECOND SPECIES when it involves two main classes or any of their subclasses (with or without facets), one of them being the actual subject of exposition and, therefore, the PRIMARY phase, the other, not the subject of exposition and, therefore, SECONDARY. The secondary phase merely indicates a subject towards which the exposition of the primary phase is biased or by which it is influenced or with which it institutes a comparison.

Such a bias may restrict the scope of the subject expounded; it may make the exposition selective; it may lead to a differential emphasis on the different parts of the subject expounded; it may throw that subject in a special relief or it may adapt it — all from the point of view of the subject of the secondary phase *i.e.* from the

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point of the readers who are chiefly interested in the subject of the secondary phase and yet require some knowledge of the subject of the primary phase in order to pursue their own special subject of study effectively. In particular most of the illustrations required in the elucidation of the subject of the primary phase will be taken from that of the secondary phase. Or the book may expound the value of the subject of the primary phase to that of the secondary phase.

Examples

730 GATES (S. B.). Pure mathematics for engineers.

The specific subject of this book is Mathematics; but its exposition is influenced by the needs of students of engineering. Only so much of mathematics is given as can be used as a tool by the engineer in the pursuit of his own subject. The specific subject is, therefore, two-phased. The primary phase is the Main Class 'Mathematics'. The secondary phase is the Main Class 'Engineering' and it is of the second species.

731 TIPPETT (L. C.). The methods of statistics, an introduction mainly for workers in the biological science.

The specific subject of this book is two-phased. The subject that is expounded belongs to the Main Class 'Mathematics' and is the subclass 'Statistics' and it is, therefore, the primary phase. The secondary phase is the Main Class 'Biology' and it influences the exposition given of statistical methods; the statistical data given in the examples and exercises are drawn mostly from the field of biology. The secondary phase is, therefore, of the second phase.

732 FRANKLIN (Philip). Differential equations for electrical engineers.

The specific subject of this book is two-phased. The subject that is expounded belongs to the Main Class 'Mathematics' and is the subclass 'Differential equations'. It is, therefore, the primary phase. The secondary phase belongs to the Main Class 'Engineering'

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and is the subclass 'Electrical engineering'. It influences the exposition of the primary phase; only such equations are studied as occur in electrical engineering; also most of the examples and exercises are drawn from the same field. The secondary phase is, therefore, of the second species.

733 HINSHELWOOD (C. N.). Thermodynamics for students of chemistry.

The specific subject of this book is two-phased. The subject expounded belongs to the Main Class 'Physics' and is the subclass 'Thermodynamics'. It is, therefore, the primary phase. The secondary phase is the Main Class 'Chemistry'; it influences the exposition of the primary phase. The theorems studied are those which are useful in chemistry and they are expounded with chemistry as the field of application. The secondary phase is, therefore, of the second species.

734 COTTON (H.). Mining electrical engineering.

The specific subject of this book is two-phased. The subject expounded belongs to the Main Class 'Engineering'. It is, therefore, the primary phase. The secondary phase also belongs to the Main Class 'Engineering' but is the subclass 'Mining'. It influences the exposition of electrical engineering and makes it emphasise the peculiar problems that arise when applied to mining. It is, therefore, of the second species.

735 TINKLER (C. Kenneth), *etc.* Applied chemistry, a practical handbook for students of household science etc.

The specific subject of this book is two-phased. The subject expounded is the Main Class 'Chemistry' and it is, therefore, the primary phase. The secondary phase belongs to the Main Class 'Useful arts' and is the subclass 'Domestic science' and it restricts the substances and the problems treated in the book to those that figure frequently in domestic science. It is, therefore, of the second species.

736 MARR (J. E.). Agricultural geology.

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The specific subject of this book is two-phased. The subject expounded is the Main Class 'Geology' and it is, therefore, the primary phase. The secondary phase is the Main Class Agriculture and it merely influences the exposition of Geology restricting it only to such problems as will be of interest and use to students of agriculture. It is, therefore, of the second species.

737 HOLE (R. S.). A manual of botany for Indian forest students.

The specific subject of this book is two-phased. The subject expounded is the Main Class 'Botany' and it is, therefore, the primary phase. The secondary phase is the class 'Forestry' and it merely influences the exposition of botany by restricting it to such natural groups of plants and emphasising such problems as will be of use and interest to students of forestry. The secondary phase is, therefore, of the second species.

738 KERR (J. Graham). Zoology for medical students.

The specific subject of this book is two-phased. The subject expounded is 'Zoology' and it is, therefore, the primary phase. The secondary phase is the Main Class 'Medicine' and it merely influences the exposition of zoology by deciding the selection of the natural groups of animals and the problems treated having in view the needs of students of medicine. The secondary phase is, therefore, of the second species.

739 McCARTHY (Dwight G.). Psychology for the lawyer.

The specific subject of this book is two-phased. The subject expounded is the Main Class 'Psychology' and it is, therefore, the primary phase. The secondary phase is the Main Class 'Law' and it merely influences the exposition of psychology by emphasising the psychological problems that will be of help to a lawyer in the pursuit of his calling. The illustrations in the book will also be drawn largely from legal cases. The secondary phase is, therefore, of the second species.

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740 JACKS (M. L.). Education as a social factor.

The specific subject of this book is two-phased. The subject expounded is the Main Class 'Education' and it is, therefore, the primary phase. The secondary phase is the class 'Sociology' and it merely influences the exposition of education and makes it emphasise the value of education in meeting social problems. The secondary phase is, therefore, of the second species.

741 HAYWARD (F. H.), and FREEMAN (Arnold). Spiritual foundations of reconstruction: a plea for new educational methods.

The specific subject of this book is two-phased. The subject expounded is the Main Class 'Education' and it is, therefore, the primary phase. The secondary phase is the Main Class 'Spiritual experience' and it merely influences the exposition of education and makes it emphasise the value of education in improving the spiritual nature of man. The secondary phase is, therefore, of the second species.

303 A specific subject is TWO-PHASED with the secondary phase of the THIRD SPECIES when it involves two main classes or any of their sub-classes (with or without facets), one of them the main subject of study and therefore the PRIMARY phase, the other subordinated to it as a tool or method of investigation or as indicating the aspect of it studied and, therefore, SECONDARY.

A rather delicate sense of judgment is required to distinguish between secondary phases of the second and third species, especially in border line cases. A similar difficulty may also be experienced at the beginning in deciding which of the two subjects should be taken as the primary phase and which the second, when the secondary

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phase is of the third species. The examples under this rule and rule 302 will be of some help in sharpening judgment.

Further a more objective method of dealing with the problem will be indicated in Chapter 33.

Examples

742 DAVIES (Cecil W.). [Electrical] conductivity of solutions.

The specific subject of this book is two-phased. The main subject of study belongs to the Main Class 'Chemistry' and is the subclass 'Solutions' and it is, therefore, the primary phase. The secondary phase belongs to the Main Class 'Physics' and is the subclass 'Conduction of electricity' and it defines the particular aspect or property of solutions expounded in the book. The secondary phase is, therefore, of the third species.

743 PHILLIPS (H. Joshua). Fuels, solids, liquids and gaseous: their analysis and valuation etc.

The specific subject of this book is two-phased. The main subject of study belongs to the Main Class 'Technology' and is the subclass 'Fuels' and it is, therefore, the primary phase. The secondary phase belongs to the Main Class 'Chemistry' and is the subclass 'Analysis' and it is used as a tool to study fuels. The secondary phase is, therefore, of the third species.

744 BEAS-BECKING (L. O. M.), *etc.* [Statistical] studies on growth [of living organisms].

The specific subject of this book is two-phased. The main subject of study belongs to the Main Class 'Biology' and is the subclass 'Ontogeny' and it is, therefore, the primary phase. The secondary phase belongs to the Main Class 'Mathematics' and is the subclass 'Statistics' and it is used as a tool to study growth of living organisms. The secondary phase is, therefore, of the third species.

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- 745 ADAMS (Frank D.), *etc.* An investigation into the elastic constants of rocks, more especially with reference to cubic compressibility.

The specific subject of this book is two-phased. The main subject of study belongs to the Main Class 'Geology' and is the subclass 'Petrology' and it is, therefore, the primary phase. The secondary phase belongs to the Main Class 'Elasticity of volume' and it defines the particular aspect or property of rocks studied in the book. The secondary phase is, therefore, of the third species.

- 746 MOHR (E. C. Jul) Tropical soil-forming processes etc.

The specific subject of this book is two-phased. The main subject of study belongs to the Main Class 'Agriculture' and is the subclass 'Soil' and it is, therefore, the primary phase. The secondary phase belongs to the Main Class 'Geology' and is the subclass 'Epigene' and it represents the soil-problem or aspect of soil studied in the book. The secondary phase is, therefore, of the third species.

- 747 SAMPSON (H. C.). Popular account of the work of the Madras Agricultural Department. 1922.

The specific subject of this book is two-phased. 'Agriculture' and 'Organisation in Madras upto 192—' which is a subclass of 'Economics' are the two phases. It is difficult to decide which is the primary phase and so an appeal to the fundamental laws of library science becomes necessary. The chief users of this book will be those interested in agriculture. Further, organisation is a pure subject which can be an aspect of any concrete business such as agriculture. It is, therefore, decided that 'Agriculture' is the primary phase and that the secondary phase is of the third species.

- 748 MADRAS AGRICULTURE (Department of—). Tamil sayings and proverbs on agriculture.

The specific subject of this book is two-phased. 'Agriculture' and 'Tamil proverbs' which is a subclass

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of the Main Class 'Linguistics' are the two phases. It is difficult to decide which is the primary phase, and so an appeal to the fundamental laws of library science becomes necessary. Agriculturists will be more interested in the book than linguists; and so agriculture is taken as the primary phase. As the secondary phase indicates that the book deals with the linguistic aspect of agricultural science, it is of the third species.

749 MINTY (Leonard (L. M.). Practice and law of banking [in Great Britain].

The specific subject of this book is two-phased. 'Banking' which is a subclass of the Main Class 'Economics' and 'British law' which is a subclass of the Main Class 'Law' are the two phases. It is difficult to decide which of these is the primary phase and so an appeal to the fundamental laws of library science becomes necessary. We ask the question 'Is this book more vital to bankers or to lawyers?' It will be of day to day use to the banker and only when a critical situation arises reference to a lawyer would become necessary. It is, therefore, decided that 'Banking' is the main subject of the book and is, therefore, the primary phase. 'Law' indicates the aspect of banking expounded in the book; and it is, therefore, the secondary phase of the third species.

750 HIRST (H. R.). Psychology of foreign language study.

The specific subject of this book is two-phased. The main subject of study belongs to the Main Class 'Education' and is the subclass 'Teaching of foreign language in secondary school' and it is, therefore, the primary phase. The secondary phase is the Main Class 'Psychology' and it indicates the aspect of teaching foreign language treated in the book; it can also be said that it is used as a tool in investigating the question of teaching foreign language. The secondary phase is, therefore, of the third species.

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Exercises

For the following books

- A State the subjects which form the phases;
- B Show which subject is the primary phase; and
- C Show to what species the secondary phase belongs:

751 CARNEGIE INSTITUTION OF WASHINGTON. Public lectures [on science].

752 INDIA. SURVEY (Department of—). Tides of the Indian Ocean. [A yearbook begun in 1880].

753 REICHENSTEIN (David). Albert Einstein [1871—]: a picture of his life and his conception of the world.

754 UNITED STATES. STANDARDS (National Bureau of—). Code for protection against lightning.

755 FOLIN (Otto). Laboratory manual of biological chemistry.

756 WORLD POWER CONFERENCE. Transactions of the Fuel Conference, 1928.

757 HUXLEY (T. H.). [b. 1825]. Collected essays.

758 ZITTEL (Karl Alfred von). History of geology and palaeontology [in the world] to the end of the nineteenth century.

759 BION (William Robert). Catalogue of the library of the Geological Survey of India. [founded 1856].

760 MEISEL (Max). A bibliography of American natural history; the pioneer century, 1769—1865.

761 JOHNSON (Elizabeth A.). A select list of the publications of the U. S. A. Bureau of Labour Statistics.

762 BOLTON (Henry Carrington). A select bibliography of chemistry, 1492—1892.

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763 UNITED STATES. AGRICULTURE (Department of—). Forest and range resources of Utah: their protection and use. 1930.

764 BENGAL. AGRICULTURE (—Department). Annual report.

765 ROLLESTON (Humphrey). *Ed.* British encyclopaedia of medical practice, including medicine, surgery, obstetrics, gynaecology and other special subjects.

766 MITTER (Sushil Chandra). *La pensée de Rabindranath Tagore.* [b. 1861].

767 GREAT BRITAIN. JOINT COMMITTEE [1933] ON INDIAN CONSTITUTIONAL REFORM. Report.

768 AUSTRALIA. ROYAL COMMISSION TO INQUIRE INTO THE MONETARY AND BANKING SYSTEMS [1933] Report.

769 BOMBAY. TEXTILE LABOUR ENQUIRY COMMITTEE [1937]. Report.

770 PUNJAB. List of electrical undertakings in India till ... 1931-32.

771 INDIA. Annual return of statistics relating to forest administration in India.

772 VIDAL-LABLACHE (P.). *Atlas de géographie, physique, politique, économique, géographique, ethnographique.*

773 WILLIAMS (James Feiring) and FROESE (H.). *Atlas of the human anatomy with explanatory text.*

774 BROWNE (T. G.). *Atlas of ox: anatomy and physiology.*

775 UPTON (W.). *Star atlas.*

776 KELLER (Albert Galloway). [1874—]. *Ded.* *Studies in the science of society* ed. by George Peter Murdock.

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777 INDIAN OLYMPIC ASSOCIATION. Sports. V. 1—. 1936—.

778 INDIAN agriculturist. V. 1—. 1876—.

779 INDIAN journal of agricultural science. V. 1—. 1931—.

780 MADRAS agricultural journal. V. 1—. 1913—.

781 AGRICULTURAL SOCIETY OF CEYLON. Tropical agriculturist. V. 1—. 1882—.

782 ROYAL AGRICULTURAL SOCIETY. *Great Britain*. Journal. V. 1—. 1838—.

783 PAIVA (E. A. de). Day calculator.

784 CAMPIN (F.). and BROADBENT (J.). Earthwork tables.

785 MILLSPAUGH (Charles F.). Herbarium organization.

786 MUNBY (Alan E.). Laboratories: their planning and fittings.

787 RANDALL (Harlan J), *etc.* Consumers' co-operative adventures: case studies.

788 ARUMUGA NAVALAR (N.). Saiva vinavidai: a catechism on Saivism.

789 GHATE (V. S.). Lectures on the [Aitareyin] Rigveda ed. by V. S. Suktankar.

790 HENRY (Alfred). Calculus and probability for actuarial students.

791 SHAW (F. J. F.). A handbook of statistics for use in plant breeding and agricultural problems.

792 HOLZINGER (Karl J.). Statistical methods for students of education.

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793 FREY (Thornton C.). Probability and its engineering uses.

794 HODGSON (T.). Applied mathematics for engineers. V. 3. Differential equations with applications.

795 McLACHLAN (N. W.). Bessel functions for engineers.

796 GANS (Richard). Vector analysis with application to physics.

797 SWINBURNE (James). Entropy or thermodynamics from the engineers' standpoint and the reversibility of thermodynamics.

798 GOLDING (E. W.). Electrification of agriculture and rural districts.

799 JAGO (William). Manual of forensic chemistry dealing especially with chemical evidence; its preparation and adduction.

800 FOX (Cyril S.). A comprehensive treatise on engineering geology.

801 RASTALL (R. H.). Agricultural geology.

802 PERCIVAL (John). Agricultural botany.

803 JAMES (William). Talks to teachers on psychology etc.

804 RIVLIN (Harry N.). Educating for adjustment [of personality].

805 COUTURAT (Louis). Philosophischen Prinzipien der Mathematik.

806 ZAREMBA (Stanislas). La logique des mathématiques.

807 BETSCH (Christian). Fiktionen in der Mathematik.

808 WOODWARD (C. J.). Arithmetical chemistry.

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- 809 HART (Edward). Textbook of chemical engineering.
- 810 ALLEN (Alfred H.). Commercial organic analysis.
- 811 SMYTH (Henry Field) and OBOLD (Walter Lord). Industrial microbiology.
- 812 CRUESS (W. Y.), *etc.* Laboratory examination of wines and other fermented fruit products.
- 813 INSTITUTION OF PETROLEUM TECHNOLOGISTS. Standard methods of testing petroleum and its products.
- 814 PRENTISS (A. M.). Specific heat and thermal diffusivities of certain explosives.
- 815 CRILE (George). Phenomena of life: a radio-electric interpretation ed. by Amy Rowland.
- 816 RASTALL (R. H.). Physico-chemical geology.
- 817 HILTON (Harold). Mathematical crystallography and the theory of groups of movements.
- 818 WELLS (Roger C.). Electric activity in ore deposits.
- 819 FARADAY SOCIETY. Physical chemistry of igneous rock formation.
- 820 CLARKE (Frank Wigglesworth). Constitution of natural silicates.
- 821 INGLE (Herbert). Manual of agricultural chemistry.
- 822 HAYES (Herbert Kendall), *etc.* Breeding crop plants.
- 823 ROBBINS (Wilfred W.). Botany of crop plants.
- 824 STEINMETZ (Ferdinand H.). Winter hardiness in alfalfa varieties.
- 825 WELLINGTON (Richard). Comparison of first generation of tomato-crosses and their parents.

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826 ROETHE (Harry E.). Fires in cotton gins and how to prevent them.

827 PAGE (Irvin H.). Chemistry of the brain.

828 MACY (H.), *etc.* Observation on the quantitative changes in the microflora during the manufacture and storage of butter.

829 KARIM (A.). Note on the iodine absorption by lac and similar natural resins and a rapid method for its estimation.

830 BRITTON (Karl). Communication: a philosophical study of language.

831 THOMPSON (Godfrey H.). Factorial analysis of human ability.

832 MELDRUM (H. J.). An investigation into secondary school mathematics: an analysis of the results of the mathematics I paper, Intermediate certificate examination, New South Wales, 1931.

833 STEFFENSEN (J. F.). Some recent researches in the theory of statistics and actuarial science.

834 MACSWINNEY (Robert Forster). The law of mines, quarries and minerals [in Great Britain].

304 In translating the name of a specific subject into class number, each phase is translated independently, the number of the primary phase being placed first and that of the secondary phase following WITH or WITHOUT CONNECTING SYMBOLS between them (as prescribed in the scheme of classification used).

The next three chapters will deal with the connecting symbols proscribed in the Colon and the Decimal Classifications and will set down the rules of procedure with examples and exercises.

CHAPTER 31

SECONDARY PHASE OF THE FIRST SPECIES COMMON SUBDIVISIONS .

31C When the Secondary Phase is of the First Species *i.e.* when the specific subject of a book involves a common subdivision, in the Colon Classification, the number of the secondary phase follows that of the primary one WITHOUT ANY CONNECTING SYMBOL.

This rule is equivalent to Rule 22 of Part 1 of the *Colon classification*. The other rules of that chapter give the characteristics on the basis of which the common subdivision should be further divided or amplified and contain special instructions to do the translation. The substance of those may be stated in general terms as follows:

Most of the common subdivisions may be further subdivided on the basis of one or more trains of characteristics.

- (i) *c, d, h, l, m, n, p, q, s, t, u* and *v* may be divided on the basis of geographical and chronological trains characteristics, the numbers corresponding to the two trains being separated by a colon.
- (ii) *f, j, w, x* and *y7* may be subdivided on the basis of the chronological train of characteristic alone.
- (iii) *r* may be subdivided on the basis of the geographical characteristic alone.

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- (iv) *g* and *k* and the subdivisions of *y* other than *y7* and the subdivisions of *z* may not need subdivision.
- (v) As the subdivision of *a* and *b* is more complicated, the related rules may be looked up in the *Colon classification*.

The area to be used for the construction of the geographical number, the epoch for the chronological number and the number of digits to which the chronological number should be worked will depend on the common subdivision used and the content of the book classified. Detailed instructions for these are given in the rules of Chapter 2 of Part 1 of the *Colon classification*.

Read the special notes on Common Subdivisions given in section 8 of the several chapters of Part 1 beginning with Chapter 7.

31D When the Secondary Phase is of the First Species, the Connecting Symbol between the primary and the Secondary Phases is '0' in the Decimal Classification.

31Da When the Secondary Phase is 'Bibliography', the specific subject has to be deemed to be One-phased in the Decimal Classification and put in the Generalia Class '0 Bibliography' as there is no Common Subdivision 'Bibliography'.

No doubt this make-shift arrangement violates the Canon of Context. It is not easy to see why this is being continued in edition after edition. A full discussion is given in *Modern Librarian*.*

* RANGANATHAN (S. R.). Bibliography in the Colon and the Decimal Classifications. (*Modern Librarian*, V. 14. 1944. Pp. 20-27.)

COMMON SUBDIVISIONS

31D9 The absence of provision for ' Criticism ' as a Common Subdivision forces one to deem several two-phased specific subjects to be one-phased.

Later on we have suggested the use of 188 as the Common Subdivision number for ' Criticism ',

694 HALSBURY (*Lord*). Laws of England.

Colon Number	
Primary Phase	Secondary Phase (<i>First species</i>)
(0) Laws of England	" Encyclopaedia "
(1) Z	k
(2) Z [C] : [L] : [P]	
(3) Z [Community No.] :	
[Law No.] : [Problem	
No.]	
(4) Z [of England] : [Vacant	
∴ multifocal] : [Vacant	
∴ multifocal]	
(5) Z [Great Britain] :	
[Vacant] : [Vacant]	
(6) Z3	k
Z3k	
(7) Z3 is the Number of the Primary Phase, where	
Z is the Main Class Number	
3 is the Community Number	
No Law Number	
No Problem Number	
No Connecting Symbol	
k is the Number of the Secondary Phase,	
(Common Subdivision Number) where	
k is the Common Subdivision Digit	
(8) Z = Law	
Z3 = Law of Great Britain	

PHASE-ANALYSIS

79% = Encyclopaedia of the Laws of Great Britain which is roughly equivalent to the specific subject of the book

Decimal Number

Primary Phase

Secondary Phase
(*First species*)

(5) 346

3

346.03

(6) Co-extensiveness is reached.

(7) 346 is the Number of the Primary Phase where

34 is the Main Class Number

6 is the Community Number

0 is the Connecting Symbol

3 is the Common Subdivision Number

(8) 3. = Social sciences

34 = Law

346 = Law of England

346.03 = Encyclopaedia of the Laws of England, which is roughly equivalent to the specific subject of the book.

695 WIRELESS world and radio review [Begun in Great Britain in 1911].

Colon Number

Primary Phase

Secondary Phase
(*First species*)

(0) Wireless and radio World ... review

(1) D. The work facet *m*
belongs to
' Mechanical
Engineering '

(2) D [W] : [S] : [P] : *m* [G] : [C]
[E]

(4) D [Wireless] : *m* [" Great Britain "]:
[" Broadcast- [" 1911 "]
ing "]: [Vacant]
∴ multifocal] [Vacant ∴ absent]

COMMON SUBDIVISIONS

- | <i>Primary Phase</i> | <i>Secondary Phase
(First species)</i> |
|------------------------------------------------------------|------------------------------------------------------------------------------|
| (5) D [Wireless]:
[Broadcasting]:
[Vacant]: [Vacant] | <i>m</i> [Great Britain]:
[1911] |
| (6) D666:485 | <i>m3:N11</i> |
| | D666:485 <i>m3:N11</i> |
| (7) D666:485 | is the Number of the Primary Phase
where |
| D | is the Main Class Number |
| 666 | is the Work Number |
| : | indicates change of characteristic |
| 485 | is the Secondary Work Number |
| No Part Number | |
| No Engineering Number | |
| No Connecting Symbol | |
| <i>m3:N11</i> | is the Number of the Secondary Phase
(Common Subdivision Number)
where |
| <i>m</i> | is the Common Subdivision Digit |
| 3 | is the Geographical Number |
| : | indicates change of characteristic |
| N11 | is the Chronological Number |
| (8) D | = Engineering |
| D6 | = Mechanical engineering |
| D66 | = Electrical engineering |
| D666 | = Wireless engineering |
| D666:4 | = Wireless communication
engineering |
| D666:48 | = Wireless telephony engi-
neering |
| D666:485 | = Broadcasting |
| D666:485 <i>m</i> | = Periodicals on broadcast-
ing |
| D666:485 <i>m3</i> | = British periodicals on
broadcasting |

PHASE-ANALYSIS

D666:485m3:N = „ begun in 1900's.
 D666:485m3:N1 = „ begun in 1910's.
 D666:485m3:N11 = The British periodical on
 broadcasting begun in
 1911

which is “ *Wireless world and radio review* ”

Decimal Number

Primary Phase

Secondary Phase (First species)

(5) 621-384

5

621-38405

(6) Co-extensiveness is not reached because the Geographical and the Chronological Facets of the Secondary Phase are omitted and the number stands for any periodical on the subject published in any country.

(7) 621-384 is the Number of the Primary Phase where

62 is the Main Class Number

384 is the Work Number

0 is the Connecting Symbol

5 is the Number of the Secondary Phase

(8) 6 = Useful arts

62 = Engineering

621 = Mechanical engineering

621-3 = Electrical engineering

621-38 = Electrical communication engineering

621-384 = Wireless communication engineering

621-38405 = A periodical on wireless communication engineering

696 EMPIRE social hygiene yearbook [Begun in 1934].

COMMON SUBDIVISIONS

Colon Number

- | <i>Primary Phase</i> | <i>Secondary Phase
(First species)</i> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| (0) Social hygiene | Empire yearbook |
| (1) Y1 | n |
| (2) Y1 [G]: [P]:
[S] [Rest
omitted ... there
is Common Sub-
division] | n [G]: [C] |
| (5) Y1 [Vacant]:
[Social evil]:
[Vacant] | n [British Empire]:[1934] |
| (6) Y1:44 | n1-3:N34 |
| | Y1:44n1-3:N34 |
| (7) Y1:44 is the Number of the Primary Phase
where
Y1 is the Canonical Class Number
No Group Number
: indicates change of characteristic
44 is the Problem Number
No Secondary Problem Number
No Geographical Number
No Chronological Number
No Connecting Symbol
n1-3:N34 is the Secondary Phase Number (Com-
mon Subdivision Number) where,
n is the Common Subdivision digit
1-3 is the Geographical Number
: indicates change of characteristic
N34 is the Chronological Number | |
| (8) Y | = Social sciences |
| Y1 | = Sociology |
| Y1:4 | = Social pathology |
| Y1:44 | = Social evil |
| Y1:44n | = Year books on social evil |

PHASE-ANALYSIS

Y1:44n1-3 = „ having the British Empire within their purview

Y1:44n1-3:N = „ „ and started in the 1900's

Y1:44n1-3:N3 = „ „ „ 1930's

Y1:44n1-3:N34 = The yearbook on social evil having the British Empire within its purview and started in 1934

which is the *Empire social hygiene yearbook*
Decimal Number

Primary Phase

Secondary Phase
(First species)

(5) 176-5

59

176-5059

(6) Co-extensiveness is not reached because the Geographical and the Chronological Facets of the Secondary Phase are omitted and the number stands for any yearbook having any Geographical area within its purview.

(7) 176-5 is the Number for the Primary Phase where

1 is the Main Class Number

76-5 is the Problem Number

0 is the Connecting Symbol

59 is the Number for the Secondary Phase (Common Subdivision Number)

(8) 1 = Philosophy

17 = Ethics

176 = Sexual ethics

176-5 = Social evil

176-505 = Periodicals etc. on social evil

176-5059 = Almanacks on social evil

Note that the Primary Phase is forcedly placed in Ethics', though its import is more 'Sociological', since

COMMON SUBDIVISIONS

'Sociology' is not given proper treatment in the Decimal Classification.

Exercise

For each of the books 697—729 and 751—789

- A Translate the specific subject into Colon Number showing the result at each stage of procedure
- B Translate the specific subject into Decimal Number showing the result at each stage of procedure

Note. There is no number for 'the Common Subdivision 'Criticism' in the Decimal Classification. But many classes in 'Literature' and some in other subjects need it. Hence we suggest the use of '188 Special methods' to represent it.

CHAPTER 32

SECONDARY PHASE OF THE SECOND SPECIES POINT OF VIEW OR BIAS DEVICE

32C When the Secondary Phase is of the Second Species, the Connecting Symbol between the Primary and the Secondary Phases is '0' in the Colon Classification.

This is called Bias Device. It may also be called 'Point of View Device'. The Primary Phase of the Class Number is called the Basic Number and the Secondary one the Bias Number.

Read Rules 68, 681, and 682, of the *Colon classification*.
Read also Rules -

78x, 78:94 of 'Chapter 7 Literature';
89, 8919, 89190 and 8919q of 'Chapter 8 History';
E292 of 'Chapter E Chemistry'; and
X9 of 'Chapter X Economics'.

32D When the Secondary Facet is of the Second Species, the Connecting Symbol between the Primary and the Secondary Phases is '0001' in the Decimal Classification and the decimal point if any in the Secondary Phase should be omitted.

Examples

730 GATES (S. B.). Pure mathematics for engineers

Colon Number

<i>Primary Phase</i>	<i>Secondary Phase (Second species)</i>
(0) Pure mathematics	For engineers
(1) B	D

BIAS DEVICE

- | <i>Primary Phase</i> | <i>Secondary Phase
(Second species)</i> |
|----------------------|--------------------------------------------------------------------|
| (2) | D [W]: [P]: [E] |
| (4) | D [Vacant ∴ diffuse]:
[Vacant ∴ diffuse]:
[Vacant ∴ diffuse] |
| (5) | D [Vacant]: [Vacant]:
[Vacant] |
| (6) B | D |
- BOD
- (7) B is the Number of the Primary Phase where
 B is the Main Class Number
 0 indicates change of Phase
 D is the number of the Secondary Phase (Bias Number) where
 D is the Main Class Number
 No Work Number
 No Problem Number
 No Engineering Number
- (8) B = Mathematics
 BOD = Mathematics from the point of view of engineers
 which is roughly equivalent to the specific subject of the book

Decimal Number

- | <i>Primary Phase</i> | <i>Secondary Phase
(Second species)</i> |
|----------------------|---------------------------------------------|
| (5) 51 | 62 |
- 510-00162
- (6) Co-extensiveness is reached
- (7) 51 is the Number of the Primary Phase where
 51 is the Main Class Number
 0-001 indicates change of Phase
 62 is the Number of the Secondary Phase (Related Number) where

PHASE-ANALYSIS

- 62 is the Main Class Number
- (8) 5 = Pure science
- 51 = Pure mathematics
- 510.0016 = Pure mathematics in relation to
useful arts
- 510.00162 = „ engineering
which is roughly equivalent to the specific
subject of the book.

Exercise

For each of the books 731—741 and 790—804

- A Translate the specific subject into Colon Number
showing the result at each stage of procedure.
- B. Translate the specific subject into Decimal Number
showing the result at each stage of
procedure.

CHAPTER 33

SECONDARY PHASE OF THE THIRD SPECIES PRINCIPLES OF LAST AND PENULTIMATE OCTAVES

33C1 When the Secondary Phase is of the Third Species, the Connecting Symbol between the Primary and the Secondary Phases is “ : ” in the Colon Classification except in the circumstances differently provided for in Rule 33C3.

33C2 It may not always be necessary to attain co-extensiveness in translating the Secondary Phase; it is enough to stop at the point where everything will be expressed implicitly by context when the numbers of the two phases are combined.

The subject of the secondary phase is called “ Last Octave Class ” and its number a “ Last Octave Number ”. The principle involved in attaching a secondary phase of the third species to the primary one is the ‘ Principle of the Last Octave ’. It is enunciated and elaborated in Rule 662 of Part 1 of the *Colon classification*.

The commentary on that Rule explains the appropriateness of the name ‘ Last Octave ’.*

* See also RANGANATHAN (S. R.). Impact between mathematics and library science. (Modern librarian. V. 10. 1940. Pp. 22-23).

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To all appearance the Secondary Phase takes the place of a Facet in the class number. Since the Secondary Phase will begin with a capital letter it will not come in conflict with the Facet whose place it takes in the class number provided the Facet begins with an Arabic numeral. In that case, the number with this phase will come, in arrangement, after all those which have the number of the primary phase elaborated by the addition of a Facet.

But if the Facet also begins with a capital letter it will not be possible to distinguish it from the Secondary Phase. This ambiguity will arise if the Facet is a Chronological or Subject one. To remove the ambiguity in such cases, the following Rule should be followed.

33C3 When the Secondary Phase is of the Third Species and to all appearance it takes the place of a Facet of the Primary Phase which is a Chronological or Subject one (*i.e.* begins with a capital letter) the Connecting Symbol between the Primary and the Secondary Phase is “ :9 ” in the Colon Classification.

The subject of the secondary phase is then called ‘Penultimate Octave Class’; its number “Penultimate Octave Number”; and the principle involved, “Principle of Penultimate Octave’. It is enunciated and elaborated in Rule 663 of Part 1 of the *Colon classification*. The commentary on that Rule explains the appropriateness of the name ‘Penultimate Octave’.*

Occasion to use this principle will arise when the Secondary Phase takes the place of the Chronological

* See also RANGANATHAN (S. R.). Impact between mathematics and library science. (Modern librarian. V. 10. 1940. Pp. 23-33).

LAST OCTAVE

Facet in ' V History ' ' X Economics ' and ' Y1 Sociology ' or of the Subject Facet in ' T Education ' when Problem Facet is ' Teaching technique ' or ' Organisation ' or any of their sub-divisions or of the Substance Facet in ' E Chemistry ' or comes after any of the Problem Divisions of ' L Medicine ' which admits of ' Animal or Material or Substance Facet ' as the Differential Facet.

33C4 The specific subject of a Secondary Phase of the Third Species should as a rule be more abstract or more artificial than that of the Primary Phase.

In all the examples given under Rule 303, this feature may be recognised. It is also implied in the very definition of the Secondary Phase of the third species. In symbols it implies that

- 1 B, P, R and Z can be a secondary phase, whatever the primary phase is;
- 2 C cannot be a secondary phase when the primary one is B;
- 3 D and E cannot be a secondary phase when the primary one is B or C;
- (c) H, I, J, K, L and M cannot be a secondary phase when the primary phase is B or C or G;
- 4 Δ , N and O cannot be a secondary phase in any case; and
- 5 S can be a secondary phase when the primary phase is T but not the other way

33D When the Secondary Phase is of the Third Species, the Connecting Symbol between the Primary and the Secondary Phases is " 0001 " in the Decimal Classification and the

PHASE-ANALYSIS

decimal point, if any, in the Secondary Phase should be omitted.

Since the same symbol is used for the second species as well as third species, ambiguity will arise. This is a serious defect in the Decimal Classification. A note like the following which occurs under '150 Psychology' of the *Decimal classification* shows that the ambiguity is recognised vaguely but not faced. It may be that it is not faced because there is no suitable notational device that could be thought of. Or it may be because the essential qualities of a classificatory language are not fully borne in mind—in particular that an essential purpose for which an artificial classificatory language is designed is to avoid the ambiguities and alternatives incidental to ordinary language. Here is the note:

'Works on psychology as applied to various subjects are in general best classed with those subjects, but may be kept together under 150.13. Relations of psychology to other subjects may be expressed by using 150.001 divided like the whole classification: e.g. 150.0012 Psychology and religion 150.0015 Psychology and science etc.'

Examples

742 DAVIES (Cecil W.). [Electrical] conductivity of solutions.

Colon Number

<i>Primary Phase</i>	<i>Secondary Phase</i> (<i>Third species</i>)
(0) Of Solutions	[Electrical] conductivity
(1) E	C6
(3) E [Problem No.]: [Substance No.]	C6 [Electricity No.]: [Problem No.]
(4) E [Solutions]: [Vacant . . . absent]	C6 ["Current"] : [Con- ductivity]

LAST OCTAVE

- | <i>Primary Phase</i> | <i>Secondary Phase
(Third species)</i> |
|--------------------------------|---------------------------------------------------------------------------------|
| (5) E [Solutions]:
[Vacant] | C6 [Kept vacant 'implied when attached to the primary phase':
[Conductivity] |
| (6) E22 | C6:14 |
| | E22:C6:14 |
| (7) E22 | is the Number of the Primary Phase where |
| E | is the Main Class Number; |
| 22 | is the Problem Number; and |
| No | Substance Number; and |
| : | indicates change of phase; and |
| C6:14 | is the Number of the Secondary Phase (Third species) where |
| C6 | is the Canonical Class Number; |
| No Electricity | Number as 'Current Electricity' is implied by the Primary Phase; |
| : | indicates change of characteristic; and |
| 14 | is the Problem Number |
| (8) E | = Chemistry |
| E2 | = Physical chemistry |
| E22 | = Solutions |
| E22:C | = Physics of solutions |
| E22:C6 | = Electrical properties of solutions |
| E22:C6:1 | = Production, storage and propagation of electricity in solutions |
| E22:C6:14 | = Conduction of electricity in solutions |
| | which is roughly equivalent to the specific subject of the book. |

Decimal Number

- | <i>Primary Phase</i> | <i>Secondary Phase
(Third species)</i> |
|----------------------|------------------------------------------------------------------------------|
| (5) 541.341 | [Deemed absent] |
| (6) Co-extensiveness | is not reached, as the number stands for 'Surface tension, viscosity, diffu- |

PHASE-ANALYSIS

sion, osmosis, and conductivity' of Solution, as the note under 541·341 in the *Decimal classification* shows.

Note that these different physical properties can be individualised by adding the Secondary Phase as follows: 541·3410001537. But, as the scheme mentions the subjects in the Complete Tables, the presumption is that the subject is deemed to be single-phased. We are, therefore, prevented from developing the Secondary Phase and obliged to await further subdivision of 541·341 by the classificationist himself.

- | | | |
|-----|---------|---------------------------------------------|
| (7) | 54 | is the Main Class Number |
| | 1·341 | is the Problem Number |
| (8) | 5 | = Pure science |
| | 54 | = Chemistry |
| | 541 | = Theoretical chemistry; physical chemistry |
| | 541·3 | = Physical chemistry |
| | 541·34 | = Solute state |
| | 541·341 | = General properties of solutions |

743 PHILIPS (H. Joshua). Fuels, solid, liquid and gaseous: their analysis, valuation etc.

Colon Number

<i>Primary Phase</i>	<i>Secondary Phase (Third species)</i>
(0) Fuels etc.	Their analysis etc.
(2) F [S] : [P]	E [P] : [S]
(4) F [Fuels] : [Vacant : absent]	E [Analysis] : [Fuels etc.]
(5) F [Fuels] : [Vacant]	E [Analysis] : [Kept vacant : implied when attached to primary phase]
(6) F55	E3
	F55·E3

LAST OCTAVE

Decimal Number

(5) 543.8

- (6) Co-extensiveness is not reached since 'Fuel' is not individualised. This number implies that the subject is deemed to be single-phased. This number will take this book away from those which study the technology of fuel. If it is better filiatory arrangement to keep them along with those on 'Fuel technology', the subject must be deemed two-phased and the number will be 662.60001543. Then co-extensiveness will be reached.

744 BEAS-BECKING (L. O. M.), etc. '[Statistical studies of] growth [of living organisms].

Colon Number

Primary Phase

Secondary Phase (Third species)

- | | |
|--------------------------------|---------------------|
| (0) Growth of living organisms | Statistical studies |
| (2) G [O]:[P] | B28 |
| (5) G [Vacant]:
[Ontogeny] | |
| (6) G:7 | B28 |

G:7:B28

Decimal Number

Primary Phase

Secondary Phase (Third species)

(5) 574.134

311

574.1340001311

- (6) Co-extensiveness is reached.

745 ADAMS (Frank D.), etc. An investigation into the elastic constants of rocks, more especially with reference to cubic compressibility.

PHASE-ANALYSIS

Colon Number

<i>Primary Phase</i>	<i>Secondary Phase (Third species)</i>
(0) Of rocks	An investigation ... cubic compressibility
(2) H2 [S]: [P]	C2 [S]: [P]
(4) H2 [Vacant '': multifocal]: [Vacant '': absent]	C2 [Solids]: [Cubic compressibility]
(5) H2 [Vacant] : [Vacant]	C2 [Kept vacant '': implied when attached to the primary phase]: [Elasticity of volume]
(6) H2	C2:53

H2:C2:53

Decimal Number

<i>Primary Phase</i>	<i>Secondary Phase (Third species)</i>
(5) 552	539.3
552-00015393	
(6) Co-extensiveness is not reached as the number in the secondary phase means only 'Elasticity' and is not subdivided to represent 'Compressibility'.	

746 MOHR (E. C. Jul). Tropical soil-forming processes.

Colon Number

<i>Primary Phase</i>	<i>Secondary Phase (Third species)</i>
(0) Tropical soil	Forming process
(1) J. Forming Facet is "Soil"	H42

LAST OCTAVE

Primary Phase

Secondary Phase (Third species)

- (5) J [Vacant]
[Vacant] [Va-
cant]: [Soil]
[Tropical]:
[Vacant]

(6) J:198

H42

J:198:H42

Note that the schedule in 'Chapter J Agriculture' of the *Colon classification* does not contain the division 'Tropical'. But by the principle of 'Unscheduled Mnemonics' (See *Prolegomena to library classification*. Pp. 121, 129), we take the digit '8' for 'Tropics' from 'Chapter 3 Geographical Divisions' and open a division for 'Tropical Soil' in the second octave as '98'.

Decimal Number

(5) 631.0913

551.3

631.091300015513

(6) Co-extensiveness is reached.

747 SAMPSON (H. C.). Popular account of the work of the Madras Agricultural Department. 1922.

Colon Number

Primary Phase

Secondary Phase (Third species)

(0) Agriculture

Popular account ...
Department. 1922.

(1) J

X

(5) J [Vacant] [Va-
cant] [Vacant]:
[Vacant] [Va-
cant]: [Vacant]

X [Kept vacant ' ' implied
when attached to the
Primary Phase]: [Orga-
nisation]: [Madras]:
[192—]

(6) J

X:8:21:N2

J:X:8:21:N2

PHASE-ANALYSIS

Note that it would be happier if a place could be found for 'Government departments' among common subdivisions. Pending the creation of a place there, we adopt this indirect procedure of using the Last Octave Principle. (2) This is one of the potential uses of the Last Octave Principle. A Secondary Phase may be provisionally managed by it until the number of publications on it or the way in which it ultimately crystallises justifies the opening of a place for it among Common Subdivisions.

Decimal Number

<i>Primary Phase</i>	<i>Secondary Phase (Third species)</i>
(5) 63	9548
630.9548	

- (6) Co-extensiveness is not reached because 'Madras' is not individualised and the number in the Secondary Phase merely represents 'History and general local treatment' and does not individualise 'Organisation of Government Department'.

Note that the Secondary Phase is of the first species and not the third in the Decimal Classification.

748 MADRAS. AGRICULTURE (Department of—).
Tamil sayings and proverbs in agriculture.

Colon Number

<i>Primary Phase</i>	<i>Secondary Phase (Third species)</i>
(0) In agriculture	Tamil sayings and proverbs
(5) J [Vacant] [Vacant] [Vacant] [Vacant] [Vacant] [Vacant]	P. [Tamil]: [Modern] [Meaning]: [Proverbs]
(6) J	P31:J4:6

J:P31:J4:6

LAST OCTAVE

Note that in accordance with the prescription in the third paragraph of Rule P24 of the *Colon classification*, '6' is used to represent 'Proverbs'.

Decimal Number

Primary Phase

Secondary Phase
(*Third species*)

(5) 63

3989

630.0013989

(6) Co-extensiveness is reached

749 MINTY (Leonard C. M.). Practice and law of banking [in Great Britain].

Colon Number

Primary Phase

Secondary Phase
(*Third species*)

(0) Practice of Bank-
ing

Law [in Great Britain]

(5) X [Banking]:
[Vacant]: [Kept
vacant ∴ provid-
ed in the Secon-
dary Phase]:
[Vacant]

Z [Great Britain]: [Va-
cant]: [Vacant]

|

|

(6) X62

Z3

X62:Z3

Decimal Number

Primary Phase

Secondary Phase
(*Third species*)

(5) 332.1

346

332.10001346

(6) Co-extensiveness is reached

750 HOSE (H. R.). Psychology of foreign language study.

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Colon Number

Primary Phase

Secondary Phase (Third species)

- (0) Of foreign language study Psychology
- (5) T [Vacant] : [Teaching technique] : [Modern language] S [Vacant] : [Vacant]
- (6) T:3:P5 S
- T:3:P5:S

Read the note under Rule 25T3.

Decimal Number

Primary Phase

Secondary Phase (Third species)

- (5) 375.4D 15
- 375.4D000115
- (6) Co-extensiveness is not reached as there is no provision to individualise 'Foreign language' in the Problem Facet of the Primary Phase

Exercise

For each of the books in 805—834

- A Translate the specific subject into Colon Number showing the result at each stage of procedure
- B Translate the specific subject into Decimal Number showing the result at each stage of procedure.

CHAPTER 34

CLASSES WITH MORE THAN TWO PHASES

341 Any species of Phase that may occur as a secondary phase may also occur as a Tertiary, Quaternary etc. Phase. When it so occurs, the specific subject is THREE-PHASED, FOUR-PHASED etc.

342 To translate the name of a specific subject with three or more phases, translate each phase and put their numbers in order of priority inserting the connecting symbols appropriate to each species as given in Chapters 31, 32 and 33.

34311C In the Colon Classification, when the Secondary and the Tertiary Phases are both of the First species and both admit of Geographical and Chronological Facets, it will be sufficient to provide Facets to one of them, choosing it according to the requirements of the case.

34311D In the Decimal Classification, when one of the Phases is 'Bibliography', it is not always possible to provide for all the three Phases.

Examples

The results are shown only at some of the stages of procedure.

835 DARROW (Karl K.). Classified list of published bibliographies in Physics, 1910—1922.

PHASE-ANALYSIS

Colon Number

Primary Phase 	Secondary Phase (First species)	Tertiary Phase (First species)
(0) In Physics . . .	Published bibliographies	Classified list of
(1) C	a	a
(2) C	a [C]	a [C]
(5) C	a [Kept Vacant provided in the tertiary phase]	a [192—] " "
(6) C	a	aN2

CaaN2

Note that the Common Subdivision 'a Bibliography' occurring as the Third Phase does not warrant use of Facets like the Generalia Class 'b Bibliography'.

Decimal Number

(5) 016.01653

(6) Co-extensiveness is not reached as there is no provision for the Chronological Facet of Bibliography'.

Note that the omission of a place for 'Bibliography' among Common Subdivisions results in this book being deemed to be one-phased and placed in the 'Generalia' class rather than being given its filiation position which must be along with, if not at the very head of, the books in 'Physics'. It will have the greatest chance to find its readers only if it is put in the Main Class 'Physics'. As it is students of Physics who will need it most, their time will be saved only if it is along with the other books in 'Physics'.

836 INSTITUTION OF CIVIL ENGINEERS. *London*. Engineering abstracts. [A periodical started in 1921].

Colon Number

Primary Phase 	Secondary Phase (First species)	Tertiary Phase (First species)
(0) Engineering	Abstracts	[Periodical]
(1) D	a	m
	272	

CLASSES WITH MORE THAN TWO PHASES

<i>Primary Phase</i>	<i>Secondary Phase</i> (<i>First species</i>)	<i>Tertiary Phase</i> (<i>First species</i>)
(2) D [W]: [P]: [E]	a [C]	m [G]: [C]
(5) D [Vacant]: [Vacant]: [Vacant]	a [Kept Vacant]: provided in the tertiary phase]	m [Great Britain]: [1921]
(6) D	a	m3:N21
	Dam3:N21	

Note that 'Abstracts' are taken as 'Bibliographies' both in the Colon and the Decimal Classifications.

Decimal Number

<i>Primary Phase</i>	<i>Secondary Phase</i>
(0) Engineering abstracts	[Periodical]
(5) 016.62	5
	016.6205

- (6) Individualisation is not effected as the Geographical and the Chronological Facets of the Secondary Phase could not be represented.

Note that the filiator position of this also calls for remarks similar to those in the last example.

837 UNITED STATES. EDUCATION (Office of—). Summaries of studies in agricultural education. 1935.

Colon Number

<i>Primary Phase</i>	<i>Secondary Phase</i> (<i>First species</i>)	<i>Tertiary Phase</i> (<i>First species</i>)
(0) Agricultural	Education	Summaries of studies
(1) J	b	a
(2) J [U] [P] [C]: [F] []: []	b: [G]: [C] []	a [C]

PHASE-ANALYSIS

<i>Primary Phase</i>	<i>Secondary Phase</i> (<i>First species</i>)	<i>Tertiary Phase</i> (<i>First species</i>)
(5) J [Vacant] [Vacant] [Vacant]: [Vacant] [Vacant]: [Vacant]	b [Vacant]: [Kept Vacant ' ' provid- ed in the tertiary phase]	a [193—]

(6) J	f	iaN3
-------	---	------

JbaN3

Decimal Number

As there is no place for 'Bibliography' among Common Subdivisions, the book has to be placed in the Main Class '0 Bibliography' (though it violates the Canon of Context to do so) and deemed to be of Two-Phases. But even this turns out to be impossible. For the Decimal Number that we would get on this basis is 016-6307. But this number would really mean 'Teaching of bibliography of agriculture' rather than 'Bibliography of the teaching of agriculture. This number has, therefore, to be given up, and there appears to be no way of representing even the Secondary Phase. The specific subject has to be treated as if it were only Single-phased. Co-extensiveness is impossible. We have to give the number 016-63 which merely represents 'Bibliography of agriculture'.

838 NATIONAL RESEARCH COUNCIL. *United States*. Industrial research laboratories [of the United States: A directory published at intervals since 1920].

Colon Number

<i>Primary Phase</i>	<i>Secondary Phase</i> (<i>First species</i>)	<i>Tertiary Phase</i> (<i>First species</i>)
(0) Industrial	Research labora- tories	[Directory ... since 1920]
(1) F	o	n
(2) F [S]: [P]	c [G]: [C]	n [G]: [C]

CLASSES WITH MORE THAN TWO PHASES

<i>Primary Phase</i>	<i>Secondary Phase (First species)</i>	<i>Tertiary Phase (First species)</i>
(5) F [Vacant]: [Vacant]	c [Kept Vacant . . provided in the tertiary phase]: [Kept Vacant . . provided in the tertiary phase]	n [United States]: [1920]

(6) F	c	n73:N20
	Fcn73:N20	
	<i>Decimal Number</i>	

<i>Primary Phase</i>	<i>Secondary Phase (First species)</i>	<i>Tertiary Phase (First species)</i>
(5) 66	72	5
	6607205	

- (6) Individualisation is not reached as the Geographical and Chronological Facets of the Tertiary Phase are not represented.

839 KEMP's engineering yearbook of formulae, rules, tables, data and memoranda. [Published in Great Britain since 1894].

<i>Primary Phase</i>	<i>Colon Number</i>	<i>Secondary Phase (First species)</i>	<i>Tertiary Phase (First species)</i>
(0) Engineering		Rules, tables ... memoranda	Yearbook [... 1894]
(5) D [Vacant]: [Vacant]: [Vacant]	e		n [Great Britain]: [1894]
(6) D	e		n3:M94
	Den3:M94		

<i>Primary Phase</i>	<i>Decimal Number</i>	<i>Secondary Phase (First species)</i>	<i>Tertiary Phase (First species)</i>
(5) 62		832	5
	62-083205		

- (6) Individualisation is not reached.

PHASE-ANALYSIS

840 REYNOLD (S. H.). Geological excursion hand-book for Bristol district.

Colon Number		
Primary Phase	Secondary Phase (First species)	Tertiary Phase (First species)
(0) Geological	Excursion for Bristol district	Handbook
(5) H	u [Bristol]: [Vacant]	g
(6) H	u3CB8 Hu3CB8g	g

Note that Bristol has been individualised by the application of Rule 35 of Part 1 of the *Colon classification*

Decimal Number	
Primary Phase	Secondary Phase (First species)
(0) Geology of Bristol district	Handbook
(5) 554.241	2 554.2416?
(6) Co-extensiveness is reached	

Note that the specific subject of this book is to be deemed to be two-phased in the Decimal Classification, as the Main Class '55 Geology' provides for geographical divisions

841 BEST one-act plays. [An annual periodical being published in Great Britain since 1931].

Colon Number		
Primary Phase	Secondary Phase (First species)	Tertiary Phase (First species)
(0) One-act plays	[Selections]	[Periodical]
(5) O [English]: [Drama]: [Vacant]: [Vacant]	x [Kept Vacant provided in the tertiary phase]	m [Great Britain]: [1931]
(6) O:2	x O:2xm3:N31	m3:N31

CLASSES WITH MORE THAN TWO PHASES

Decimal Numbers

<i>Primary Phase</i>	<i>Secondary Phase</i> (<i>Fust specs</i>)	<i>Tertiary Phase</i> (<i>Fust specs</i>)
(5) 822	822 822-082205	5

(6) Individualisation is not reached

842 TANK (Umrao Singh). Dictionary of Jain biography.

Colon Number

<i>Primary Phase</i>	<i>Secondary Phase</i> (<i>First species</i>)	<i>Tertiary Phase</i> (<i>Third species</i>)
(0) Jain	Biography	Dictionary
(1) Y1	<i>w</i>	<i>k</i>
(5) Y1 [Jain]:	<i>w</i>	<i>k</i>
[Vacant]:		
[Vacant]:		
[Vacant]:		
[Vacant]		

211

 k

Y19Q3wk

Note that the Social Group 'Jams' is individualised by the Subject Device (See Rule 60 and its subdivisions in Part 1 of the Colon classification)

Decimal Answer

<i>Primary Phase</i>	<i>Secondary Phase</i> (<i>First species</i>)	<i>Tertiary Phase</i> (<i>First species</i>)
(5) 294 ±	92	3
	294-409203	

(6) Co-extensiveness is reached

Note that this book is forcedly put in the Main Class '2 Religion' as there is no provision for individualising Social groups under the Class 'Sociology'

843 LEADING cases in Indian law. [Dictionary arrangement].

PHASE ANALYSIS

<i>Colon Number</i>		
<i>Primary Phase</i>	<i>Secondary Phase (First species)</i>	<i>Tertiary Phase (First species)</i>
(0) Indian law	Leading cases	[Encyclo- paedia]
(1) Z	y7	k
(5) Z [India]: [Vacant]: [Vacant]		
(6) Z2	y7	k

Z2y7k

Decimal Number

<i>Primary Phase</i>	<i>Secondary Phase</i>
(5) 349 5404	3

349 540403

- (6) Co-extensiveness is not reached in the strict sense as the number stands for 'Digests' which is not exactly 'Leading cases'

Note that the Decimal Classification provides a place for the 'Form Division' 'Digests' in the Main Phase itself and that this book is, therefore, to be deemed to be two Phased only.

343120 When the Secondary Phase is of the First Species and the Tertiary of the Second, no special rule of procedure is necessary, except that special rules if any, given in the *Colon classification* itself, should be followed.

Examples

The results are shown only at some of the stages of procedure.

844 GRAHAM (P. Anderson). *Ed.* Country life. an anthology.

CLASSES WITH MORE THAN TWO PHASES

<i>Colon Number</i>		
<i>Primary Phase</i>	<i>Secondary Phase (First species)</i>	<i>Tertiary Phase (Second species)</i>
(0) [English poetry]	Anthology	Country life
(5) O [English]: [Poetry]: [Vacant]: [Vacant]	x [Kept Vacant ∴ of Special rule] [Vacant]: [Vacant]: [Vacant]	Y1 [Rural group]: [Vacant]:
(6) O·1	x	Y131

O:1x0Y131

Note that this case is covered by the special Rule 78c of Part 1 of the *Colon classification*

<i>Decimal Number</i>		
<i>Primary Phase</i>	<i>Secondary Phase (First species)</i>	<i>Tertiary Phase (Second species)</i>
(5) 821	822	323 354
821 08220001323354		

(6) Co-extensiveness is reached

845 ELLIS-FERMOR (Una) Some recent research in Shakespeare's imagery.

<i>Colon Number</i>		
<i>Primary Phase</i>	<i>Secondary Phase (First species)</i>	<i>Tertiary Phase (Second species)</i>
(0) Shakespeare	Some recent research	Imagery
(1) O	:9	P
(5) O [English]: [Drama] [Shakespeare]: [Vacant]	:9 [Kept Vacant ∴ of special rule]	P [Kept Vacant ∴ implied in the Primary Phase]: [Kept Vacant ∴ implied in the Primary Phase] [Imagery]: [Vacant]

PHASE-ANALYSIS

<i>Primary Phase</i>	<i>Secondary Phase (First species)</i>	<i>Tertiary Phase (Second species)</i>
(6) O:2J64	:9	P:75
	O:2J64:90P:75	

Note that this case is covered by the special Rule 78:94 of Part 1 of the *Colon classification*

Decimal Number

<i>Primary Phase</i>	<i>Secondary Phase (First species)</i>	<i>Tertiary Phase (Second species)</i>
822-33	188	155-2
	822-33018800011552	

(6) Co-extensiveness is reached

Note that there is no number for ' Criticism ' among the Common Subdivisions of the *Decimal classification*. But most of the books in the Main Class ' Literature ' need it. Hence, we are suggesting the use of the Common Subdivision ' 188 Special methods ' as the division appropriate to the subject '

846 PARAMASIVA AYYAR (T.). Riks and the primeval gleam of light and life. [An explanation of the Rig Veda from a geological angle].

Colon Number

<i>Primary Phase</i>	<i>Secondary Phase (First species)</i>	<i>Tertiary Phase (Second species)</i>
(0) Rik	" Criticism "	Primeval gleam of light and life " Geo- logy "
(2) Q [R] : [P]	:9	H
(5) Q [Rig vedic religion, Aitareya school] :		
[Sacred book: Samhita]		
(6) Q111:21	:9	H
	Q111:21:90H	

CLASSES WITH MORE THAN TWO PHASES

<i>Decimal Number</i>		
<i>Primary Phase</i>	<i>Secondary Phase (First species)</i>	<i>Tertiary Phase (Second species)</i>
(5) 294.1	188	55
294.10188000155		

- (6) Co-extensiveness is not reached because the 'Vedic religion' is not yet subdivided in the *Decimal classification* either to individualise its sub-religions or their different sacred books.

Note that the reason for using '188' as the number for the Common Subdivision 'Criticism' is the same as that given in the note under the preceding example.

34313 It happens only rarely that the Secondary Phase is of the First Species and the Tertiary of the Third. When it does, no special rule of procedure is necessary.

But it is not impossible. A specific subject like the following may be written upon.

Examples

The results are shown only at some of the stages of procedure.

847 STATISTICAL study of the periodicals in engineering.

<i>Colon Number</i>		
<i>Primary Phase</i>	<i>Secondary Phase (First species)</i>	<i>Tertiary Phase (Third species)</i>
(0) Engineering	Periodicals	Statistical study
(1) D	m	B28
(4) D [Vacant ∴ multifocal]:	m [Vacant ∴ absent]: [Vacant ∴ absent]	
<div style="border-top: 1px solid black; padding-top: 5px;"> [Vacant ∴ absent]: [Vacant ∴ absent] </div>		

-PHASE-ANALYSIS

<i>Primary Phase</i>	<i>Secondary Phase</i> (<i>First species</i>)	<i>Tertiary Phase</i> (<i>Third species</i>)
(5) D [Vacant]: [Vacant]: [Vacant]	m [Vacant]: [Vacant]	
(6) D	m	B28
	Dm:B28	

Decimal Number

<i>Primary Phase</i>	<i>Secondary Phase</i> (<i>First species</i>)	<i>Tertiary Phase</i> (<i>Third species</i>)
(5) 62	5	311
	620-50001311	
(6) Co-extensiveness is reached		

34321 When the Secondary Phase is of the Second Species and the Tertiary of the First Species, no special rule of procedure is necessary.

Examples

The results are shown only at some of the stages of procedure.

848 'O'. Final forensic tables [for British Law]

<i>Primary Phase</i>	<i>Colon Number</i> <i>Secondary Phase</i> (<i>Second species</i>)	<i>Tertiary Phase</i> (<i>First species</i>)
(0) [Medicine]	Forensic	Tables
(1) L	Z	•
(5) L [Vacant]: [Vacant]	Z [Great Britain]: [Vacant]: [Vacant]	
(6) L	Z3	•

LOZ3e

Note that a mistake has crept in the *Bibliography of reference books and bibliographies* being V. 2 of *Reference service and bibliography* and forming Madras Library Association, publication series, 10. 'Medical jurisprudence' has been numbered "L:Z" instead of "LOZ".

CLASSES WITH MORE THAN TWO PHASES

Decimal Number

Primary Phase

Secondary Phase (First species)

(5) 340.6

8346

340.608346

(6) Co-extensiveness is not reached since 'British' is not represented.

Note that 'Medical Jurisprudence' is given a special place in the Complete Tables of the *Decimal classification* and made to usurp the place that should really go to 'Legal Associations and Societies'. This deviation from the Canon of Consistency has necessitated deeming the specific subject of the book to be only two-phased.

34322 When the Secondary and Tertiary Phases are both of the Second Species no special rule of procedure is necessary except that some of their facets may be omitted if otherwise implied and the number made shorter. This combination is only occasional.

Examples

The results are shown only at some of the stages of procedure.

849 MATHEMATICS for agricultural engineers.

Colon Number

Primary Phase

Secondary Phase (Second species)

Tertiary Phase (Second species)

(0) Mathematics

For Engineers

Agriculture

(1) B

D

J

(5) B

D [Vacant]:

J [Vacant]

[Vacant]:

[Vacant]

[Vacant]

[Vacant]:

[Vacant] [Vacant]: [Vacant]

(6) B

D

J

B0D0J

PHASE-ANALYSIS

Decimal Number

<i>Primary Phase</i>	<i>Secondary Phase (Second species)</i>	<i>Tertiary Phase (Second species)</i>
(5) 01	62	63
510-00162000163		

(6) Co-extensiveness has been reached

Note that the index of the *Decimal classification* gives 631.6 and 631.7 as representing 'Agricultural engineering'. Apart from the number being double and there being no number to comprehend both, all the possible problems of the subject are not exhausted by these two numbers. It is, therefore, suggested that 'Engineering' and 'Agriculture' may be deemed to be two different phases.

34323 When the Secondary Phase is of the Second Species and the Tertiary of the Third, no special rule of procedure is necessary.

This combination is rare in Three-Phased subjects. But it may occur more frequently in Four-Phased ones.

Examples

The results are shown only at some of the stages of procedure.

850 STATISTICAL investigation in agricultural meteorology.

<i>Colon Number</i>		
<i>Primary Phase</i>	<i>Secondary Phase (Second species)</i>	<i>Tertiary Phase (Third species)</i>
(0) Meteorological problems	Agricultural	Statistical investigation
(1) U	J	B28
(5) U [Meteorology]: [Vacant]	J [Vacant] [Vacant]: [Vacant] [Vacant]: [Vacant]	B28
(6) U28	J U280J:B28	B28

CLASSES WITH MORE THAN TWO PHASES

Decimal Number

<i>Primary Phase</i>	<i>Secondary Phase (Third species)</i>
(5) 630-5515	311
630-55150001311	

(6) Co-extensiveness is reached.

Note that as the composite class 'Agricultural meteorology' is given as a division in the Complete Tables, the specific subject of the book is deemed to be of two phases only.

34331 When the Secondary Phase is of the Third Species and the Tertiary of the First, no special rule of procedure is necessary.

This is a frequently occurring combination.

Examples

The results are shown only at some of the stages of procedure.

851 INSTITUTE OF ACTUARIES. *Great Britain.* A short collection of actuarial tables.

<i>Colon Number</i>		
<i>Primary Phase</i>	<i>Secondary Phase (Third species)</i>	<i>Tertiary Phase (First species)</i>
(0) "Insurance"	"Statistical"	Tables
(1) X	B28	e
(5) X [Insurance] :	B28	e
[Vacant] : [Vacant] : [Vacant]		
(6) X8	B28	e
X8:B28e		

Decimal Number

<i>Primary Phase</i>	<i>Secondary Phase (Third species)</i>	<i>Tertiary Phase (First species)</i>
(5) 368	311	835
368-00013110835		

(6) Co-extensiveness is reached.

PHASE-ANALYSIS

852 KNOX (Alexander). Glossary of geographical and topographical terms.

<i>Colon Number</i>		
<i>Primary Phase</i>	<i>Secondary Phase (Third species)</i>	<i>Tertiary Phase (First species)</i>
(0) Geographical and topographical	Terms	Glossary
(1) U	P	h
(5) U [Vacant]: [Vacant]	P [English]: [Modern] [meaning]: [Vacant]	h
(6) U	P111:J4 U:P111:J4k	h

<i>Decimal Number</i>		
<i>Primary Phase</i>	<i>Secondary Phase (Third species)</i>	<i>Tertiary Phase (First species)</i>
(5) 91	423	3

910-00142303

(6) Co-extensiveness is reached

Note that the Common Subdivision Number '3' is adopted, to separate 'Dictionaries' from books on 'Lexicology'.

853 LONIE (F. H.). Local government handbook. Victoria. [Encyclopaedia of laws and regulations].

<i>Colon Number</i>		
<i>Primary Phase</i>	<i>Secondary Phase (Third species)</i>	<i>Tertiary Phase (First species)</i>
(0) Local government. Victoria	"Law"	"Encyclopaedia"
(1) V	Z	h

CLASSES WITH MORE THAN TWO PHASES

<i>Primary Phase</i>	<i>Secondary Phase (Third species)</i>	<i>Tertiary Phase (First species)</i>
(5) V [Victoria]: [Local bodies]: [Vacant]	Z [Kept Vacant . implied by Pri- mary Phase]: [Kept Vacant . implied]: [Kept Vacant . implied]	
(6) V83:26	Z V83:26:9Zh	#

Note that this is a case of Penultimate Octave and that the connecting symbol is “ :9 ” since the Tertiary Phase takes the place of the Chronological Facet (of the Primary Phase) which begins with a capital letter.

Decimal Number

<i>Primary Phase</i>	<i>Secondary Phase (Third species)</i>	<i>Tertiary Phase (First species)</i>
(5) 352.0945	34	3
	352.094500013403	
(6) Co-extensiveness is reached.		

34332 When the Secondary Phase is of the Third Species and the Tertiary of the Second, no special rule of procedure is necessary.

Examples

The results are shown only at some of the stages of procedure.

854 WOLFF (K.). Changes in muscle viscosity following disease.

<i>Colon Number</i>		
<i>Primary Phase</i>	<i>Secondary Phase (Third species)</i>	<i>Tertiary Phase (Second species)</i>
(0) Muscle	Viscosity	Disease
(1) L	C2	L

PHASE-ANALYSIS

<i>Primary Phase</i>	<i>Secondary Phase (Third species)</i>	<i>Tertiary Phase (Second species)</i>
(5) L [Muscle]: [Vacant]: [Vacant]	C2 [Kept Vacant implied]: [Viscosity]	L [Vacant]: [Disease]: [Vacant]
(6) L83	C2:63 L83:C2:630L:4	L:4

Decimal Number

(5) 611.73	541.321	616
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611.7300015413210001616

(6) Co-extensiveness is reached.

Note that 'Viscosity' is given a place only in Physical Chemistry and not in Physics and that even there it is not individualised.

34333 When the Secondary and the Tertiary Phases are both of the third species, no special rule of procedure is necessary.

Examples

The results are shown only at some of the stages of procedure.

855 RADKEVICH (O. M.). Quantitative-anatomical analysis of the leaves of the rice-plants grown under different conditions.

<i>Primary Phase</i>	<i>Colon Number Secondary Phase (Third species)</i>	<i>Tertiary Phase (Third species)</i>
(0) Rice plants	Anatomy of leaves	Quantitative analysis
(5) J [Food] [Seeds] [Rice]: [Vacant]	G [Leaves]: [Morphology] [Vacant]: [Vacant]	B28
(6) J381	G5.2 J381:G5.2:B28	B28

CLASSES WITH MORE THAN TWO PHASES

Decimal Number

(5) 633-18 581-4972 311

633-18000158149720001311

(6) Co-extensiveness is reached.

Exercise

1 For each of the books 835—855

A Give the results at all the stages of procedure for
Colon Classification

B. Give the results at all the stages of procedure for
Decimal Classification

2 For each of the books 856—930

A Translate the specific subject into Colon Number
showing the result at each stage of procedure

B Translate the specific subject into Decimal
Number showing the result at each stage of
procedure.

856 BRITISH OPTICAL INSTRUMENT MANUFACTURER'S
ASSOCIATION. Dictionary of British scientific instruments.

857 POGGENDORFF (J. C.). Biographisch literarisches
Handwörterbuch zur Geschichte der exacten Wissens-
chaften.

858 INTERNATIONAL address-book of botanists.

859 SHARP (R. P.). Biographical dictionary of
foreign literature.

860 WALSH (William). International encyclopaedia
of prose and poetical collections.

861 ASSOCIATION INTERNATIONALE DES ACADEMIES.
Paris. Tables annuelles de constantes et donnees numeri-
ques de chimie, de physique et de technologie. [Begun
in 1912].

PHASE-ANALYSIS

862 WHO'S WHO IN SCIENCE [International] [Begun in 1912].

863 NATIONAL ACADEMY OF SCIENCES. *United States*. Biographical memoirs [Begun in 1877].

864 PHYSICAL SOCIETY. *London*. Report on progress in physics [Begun in 1935].

865 VON NOSTRAND'S chemical annual [Begun at New York in 1907].

866 CHEMICAL SOCIETY. *London*. Annual reports on progress of chemistry [Begun in 1905].

867 INSTITUTE OF CHEMISTRY OF GREAT BRITAIN AND IRELAND. List of official chemical appointments [Begun in 1906].

868 NATURALISTS' directory. [Begun in the United States in 1907].

869 LEAGUE OF NATIONS. Monthly epidemiological report [a statistical periodical begun in 1921].

870 UNITED STATES. CENSUS (Bureau of—). Birth, still birth and infant mortality statistics for the birth registration area of the United States.

871 McKERROW (R. B.). Dictionary of printers and book-sellers of England, Scotland and Ireland and of foreign printers of English books, 1557—1640.

872 PLOMER (H. R.). A dictionary of book-sellers and printers who were at work in England, Scotland and Ireland from 1641 to 1667.

873 WHO'S WHO IN OCCULTISM, new thought, psychism and spiritualism etc. [Begun in 1925].

874 CROSS (G.) and OLLARD (S. L.). Dictionary of English church history.

CLASSES WITH MORE THAN TWO PHASES

875 CATHOLIC who's who and yearbook [Begun in 1907].

876 COCHIN civil list.

877 LEAGUE OF NATIONS. [Economic] statistical yearbook [Begun in 1927].

878 GREAT BRITAIN. Annual statement of the trade of the United Kingdom with foreign countries and British Possessions.

879 INTERNATIONAL yearbook of agricultural statistics [Begun in 1910].

880 INDIA. Agricultural statistics of British India: an annual.

881 UNITED STATES. Statistical atlas of the United States.

882 COBETT (P. T.). Leading cases of international law [Dictionary arrangement].

883 MACKINNON (L.). Leading cases of international private law of Scotland [Dictionary arrangement].

884 HENDERSON (James). *Bibliotheca tabularum mathematicarum*, being a descriptive catalogue of mathematical tables.

885. BROWN (Basil). Astronomical atlases, maps and charts, an historical and general guide. 1932.

886 SCIENCE abstracts. Section A. Physics. [Begun in Great Britain in 1898].

887 WATER POLLUTION RESEARCH BOARD. *Great Britain*. Summary of current literature [Begun in 1928].

888 BRITISH chemical abstracts [Begun in 1926].

889 CHEMICAL abstracts. *United States*. [Begun in 1907].

PHASE-ANALYSIS

890 CURRENT metallurgical abstracts. [Begun in the United States in 1933].

891 SMITH (Albert H.). Bibliography of Canadian education. 1938.

892 MAYNARD (Katherine). Bibliography of bibliographies in electrical engineering, 1918—1929.

893 WEST (Clarence J.), etc. Bibliography of bibliographies on chemistry and chemical technology, 1903—31.

894 MATHEWS (Edward B.). Catalogue of published bibliographies in geology, 1896—1920.

895 SMITH (Wilbur M.). List of bibliographies of theological and biblical literature published in Great Britain and America, 1595—1931.

896 WEST (Clarence J.). List of manuscript bibliographies in the biological science (in the United States, 1923).

897 CHALER (Albert). Edinburgh's charm: an anthology in prose and verse.

898 HEMACHANDRA (Narayana). Aryadharmaniti. [A collection moral verses in Sanskrit etc.]

899 SUGDEN (Herbert W.). Grammar of Spenser's Faerie Queene.

900 GREENWOOD (George). Shakespeare problem.

901 SAVAGE (F. G.). The flora and folklore of Shakespeare.

902 BUCKNILL (John Charles). The medical knowledge of Shakespeare.

903 KELLNER (Leon). Restoring Shakespeare: a critical analysis of the misreadings in Shakespeare's works.

CLASSES WITH MORE THAN TWO PHASES

- 904 NAYLOR (Edward W.). Shakespeare and music etc.
- 905 RHODES (R. Crompton). The stagery of Shakespeare.
- 906 JANSSEN (Vincent Franz). Die Prosa in Shakesperes dramen.
- 907 BYRNE (Geraldine). Shakespeare's use of the pronoun of address etc.
- 908 PROCTER (William C.). Shakespeare's biblical knowledge and use of the common prayer, as exemplified in the plays of the first Ioho.
- 909 JAMESON (Anna). Shakespeare's heroines.
- 910 CLARK (Cumberland). Shakespeare and national character: a study of Shakespeare's knowledge and dramatic and literary use of the distinctive racial characteristics of the different peoples of the world.
- 911 KEETON (George W.). Shakespeare and his legal problems.
- 912 EDMUNDS (Abert J.). Buddhist and Christian Gospels.
- 913 RAMASWAMY AYYAR (M. S.). Biblical reference to the Maurya dynasty of India etc.
- 914 FRAZER (James George). Folklore in the Old Testament. 3 V.
- 915 CUTTERBUCK (E. R.) and POLLOCK (E.). Legal medical dictionary.
- 916 MARSDEN (R. G.). Digest of cases, shipping and marine insurance [Great Britain].
- 917 BERGER (J. A.) and HART (G. R.). Practical index to companies act [Great Britain].

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918 CORDINGLEY (W. G.). Dictionary of stock exchange terms.

919 BENTLEY (E. L.). Bentley's 22600 numbered code words.

920 FERGUSON (J. W. H.). Glossary of the principal Chinese expressions occurring in postal documents.

921 CHOLEY (R. S. T.) and TUCKER (H. A.). Leading cases in [British] mercantile law [Dictionary arrangement].

922 INDIA. FOREST (—department). Code of instructions for the conduct of office business and for the regulations of accounts with forms.

923 MADRAS. Madras forest act. 1882.

924 INTERNATIONAL INSTITUTE OF AGRICULTURE. International yearbook of agricultural legislation. [Begun in Italy in 1912].

925 INDIA. AGRICULTURE (Department of—). Proceedings of the second meeting of Agricultural chemists and bacteriologists held at Pusa, 1921. [First conference held in 1917].

926 WARNER (Marjorie F.), *etc.* Bibliography of plant genetics. 1934.

927 BIOMETRIKA. -[A periodical for the statistical study of biology published in Great Britain since 1904].

928 BRITISH ASSOCIATION. COMMITTEE ON BIOLOGICAL MEASUREMENTS [1927]. Biological measurements *etc.*

929 SALIT (P. W.). Seasonal variation in lipid content of the crystalline lenses *etc.* [a statistical study].

930 BROWNE (R. M.). Tables pertaining to volume of black spruce.

CLASSES WITH MORE THAN TWO PHASES

344 Here are some examples of FOUR-PHASED specific subjects.

Examples

The results are shown only at some of the stages of procedure.

931 HIPPISEY (E. W.). Chronological table of Old Testament.

Colon Number			
Primary Phase	Secondary Phase (First species)	Tertiary Phase (Second species)	Quaternary Phase (First species)
(0) Old Testament	" Criticism "	Chronological	Table
(6) Q6:22	:9	V:76	s
	Q6:22:90V:76s		

Decimal Number

Primary Phase	Secondary Phase (First species)
(5) 221	835

221.0835

(6) Co-extensiveness is reached.

In the Decimal Classification, ' Chronology of the Old Testament ' is given as a division of the Main Class ' Religion ' itself. The specific subject of this book is, therefore, to be deemed to be Two-Phased.

932 ENGLISH ASSOCIATION. *Great Britain*. Year's work in English studies [being published since 1922].

Colon Number			
Primary Phase	Secondary Phase (First species)	Tertiary Phase (First species)	Quaternary Phase (First species)
(0) O	:9	u	n
(6) O	:9	u	n1:N22

O:9un1:N22

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Decimal Number

<i>Primary Phase</i>	<i>Secondary Phase (First species)</i>	<i>Tertiary Phase (First species)</i>	<i>Quaternary Phase (First species)</i>
(5) 82	188	838	5
820-188083805			

- (6) Individualisation is not reached and this number cannot distinguish the different surveying periodicals from one another.

Note that there is no Common Subdivision 'Survey' and the nearest substitute that can be found is 838.

933 FRANCHINI (A.). Suicide in Genoa: statistical and medico-legal contributions.

Colon Number

<i>Primary Phase</i>	<i>Secondary Phase (Third species)</i>	<i>Tertiary Phase (Second species)</i>	<i>Quaternary Phase (Second species)</i>
(0) Sulcids in Genoa	Statistical	Medico	Legal
(6)	B28	L	Z
Y1:4511:2:53CG3			

Y1:4511:2:53CG3:9B280L0Z

Note that (1) this is an etiological study of a particular form of social pathology (Suicide)

(2) the Geographical Number has been obtained by applying Rule 35 of Part 1 of the *Colon classification*

(3) The Penultimate Octave Principle has been used since the Secondary Phase has taken the place of the Chronological Facet of the Primary Phase which also begins with a capital letter and the Connecting Symbol is therefore " :9 "

Decimal Number

<i>Primary Phase</i>	<i>Secondary Phase (Third species)</i>	<i>Tertiary Phase (Second species)</i>
(5) 179.7	311	340.6
179.7000131100013406		

CLASSES WITH MORE THAN TWO PHASES

- (6) Co-extensiveness is not reached since 'Genoa' cannot be represented.

Note that this book has to be forcedly put under 'Ethics' as the class 'Sociology' is not properly developed and that it is deemed to be Three-Phased only as 'Medical-Jurisprudence' is a division of 'Medicine' in the Complete Tables themselves.

Exercise

- 1 For each of the books 931—933

- A Give the results at all the stages of procedure for Colon Classification.
- B Give the results at all the stages of procedure for Decimal Classification.

- 2 For each of the books 934—936

- A Translate the specific subject into Colon Number showing the result at each stage of procedure.
- B. Translate the specific subject into Decimal Number showing the result at each of procedure.

934 HUTCHINSON (Robert Fame). A glossary of medical and medico-legal terms including those most frequently met with in the law courts [of India].

935 PLANT breeding abstracts. [Begun in Great Britain in 1930].

936 SAINT. Digest of parliamentary and municipal registration cases [of Great Britain].

CHAPTER 35

AUTO-BIAS, MODIFIED BIAS AND CLASSIC DEVICES

351 A facet of a specific subject is **AUTO-BIASED** if its focus is a scheduled division of it subdivided by another scheduled division of itself. Its focus is then an **AUTO-BIASED FOCUS**. Otherwise it is a **NORMAL FOCUS**.

Consider the Organ Facet in the Main Class 'Medicine'. It can have normal foci like 'Arms', 'Face' and 'Nose' and also like 'Veins', 'Nerves' and 'Mucous membrane'. But a specific subject in 'Medicine' may also have Auto-Biased foci like 'Veins of arms', 'Nerves of face', and 'Mucous membrane of nose'.

Consider again the 'Group Facet' in the Canonical Class 'Sociology'. It can have normal foci like 'Children', 'Women', 'Family', 'Rural community', 'Working class' and 'Hindus'. But a specific subject in 'Sociology' may also have Auto-Biased foci like 'Rural children', 'Working class women' and 'Hindu families'.

Auto-Biased foci may similarly arise in several other Main Classes like 'Psychology', 'Education', 'History' and so on.

351C In the Colon Classification the number for an Auto-Biased focus is got by coupling those of the constituent foci by the **CONNECTING SYMBOL** '-', provided a ready-made number is not given in the schedule corresponding with

AUTO-BIAS, MODIFIED BIAS & CLASSIC DEVICES

the facet either for it or for any similar combination. This is the AUTO-BIAS DEVICE.

See Rule 6831 of Part 1 of the *Colon classification*.

For the Auto-Biased Foci cited as examples under the preceding Rule, the numbers will be as follows:

<i>Auto-Biased Focus</i>	<i>Colon Number</i>
Veins of arms	163-36
Nerves of face	181-73
Mucous membrane of nose	41-86113
Rural children	11-31
Working class women	15-49
Hindu family	2-73P15

Auto-Bias Device is applied in these cases as ready-made class numbers are not given in their respective schedules in Part 2 of the *Colon classification* either for them or for similar combinations.

It has not yet been finally settled in what order the constituent foci should be coupled to make an Auto-Biased Focus. In most of the cases that we have so far come across the constituent that occurs earlier in the concerned schedule is best put first. But there are also occasional exceptions. We cannot, therefore, frame a definite rule. At present we can only say that their order is to be fixed so as to accord with the precise concept to be represented. If further and fuller experience comes our way to make it more definite, a suitable rule will be added in a future edition of the *Colon classification*.

The deeper, objective and more systematic analysis made possible by the new approach made in the present book has removed some of the vague inexplicable dissatisfaction we have had hitherto in the use and the abstention from use of the Auto-Bias Device. It has laid bare a fundamental fault committed when its inven-

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tion depended on pure intuition. It has also brought to light another fault *viz.* failure to re-do in the second edition of the *Colon classification* some of the schedules of the first edition in which what are strictly Auto-Biased Foci had been provided with ready-made numbers as though they were normal ones.

The first fault shows once again that while inventions are best made by intuition at the sub-conscious level, they may occasionally prove wrong or have faults. It is a necessary safeguard that once they are made, they should be critically tested and proved to be faultless by conscious, objective analysis and examination. Sometimes altogether a new technique may have to be developed for testing them. The great search initiated in the nineteenth century into the foundations of mathematical analysis to explore the possible faults in the intuitive but prepotent concepts of the continuity and differentiability of functions brought into use by the mathematicians of the preceding generations is a well-known historical example. Faults *were* discovered at great depths. Incidentally the technique developed for the probing work has given rise to what appears to be an altogether new branch of mathematics initiated by the *Principia mathematica* of Whitehead and Russell.

The detection and rectification of the second fault, we now realise, was crowded out as the invention of the Auto-Bias Device was made only when some of the pages of the schedules in Part 2 of the second edition of the *Colon classification* had been printed.

These faults will be removed in the next edition. In the meantime the chief amendments to be made are given here.

351C0 In Rule 0241 of Part 1 of the *Colon classification* put “ — ” after “ : ”.

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This amendment makes “—” a bigger ordinal number than “:”, whereas the opposite is the result if the Rule is left without this amendment. The need for the amendment can be seen from the order in which the amended rule and the original one arrange two allied topics. The amended rule will produce the following arrangement:

Diseases of the stomach L24:4

Diseases of the veins of the stomach L24-36:4

The original rule will arrange them as follows:

Diseases of the veins of the stomach L24-36:4

Diseases of the stomach L24:4

Surely the former is a more helpful order and the latter is not since it puts the part before the whole.

351C3 In Chapter 3 of Part 2 of the *Colon classification* use the Auto-Bias Device instead of using ‘0’ (Modified Bias Device) to divide the world on the basis of Empire Characteristic. (Though not relevant here, we may add, use the Subject Device instead of using ‘00’ to divide the world on the basis of Linguistic or any other Characteristic).

This implies changing some of the items in Chapter ‘3 Geographical divisions’ of Part 2 of the *Colon classification* as follows:

1- Empires

To be subdivided by the Auto-Bias Device

Illustrative

1-52 Roman Empire

1-53 French Empire

1-56 British Empire

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Also add after

- 1986 Ionosphere,
 " Divisions by Subject Device
 Illustrative
- 1P111 English speaking countries
- 1P123 Spanish speaking countries
- 1Q7 Muslim countries."

Those amendments will arrange the undermentioned related categories as follows: (The number '2' (= Mother country) is used for 'India' and '3' (= Favoured country) is used for 'Great Britain').

- V1:1 General history of the world
- V1-3:1 General history of the British Empire
- V1Q7:1 General history of the Muslim countries
- V2:1 General history of India
- V2-2:1 General history of Indian States
- V2-53:1 General history of French India.

Without the proposed amendments, they will stand arranged as follows:

- V103:1 General history of the British Empire
- V10Q7:1 General history of the Muslim countries
- V1:1 General history of the world
- V202:1 General history of the Indian States
- V2053:1 General history of French India
- V2:1 General history of India.

The latter is surely a less helpful order as it places the part before the whole. Thus latter arrangement which the unamended schedule of the *Colon classification* gives has been a cause of great uneasiness and dissatisfaction in our minds. The new approach and closer analysis initiated by the present book has now removed these difficulties.

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315CV Delete all the items after '8 Archives' in chapter ' V History ' of Part 2 of the *Colon classification*.

The items given there are numbered more appropriately by Auto-Bias Device as follows:

8-17 Colonial correspondence

8-22 Minutes of the executive

8-23 Proceedings of the legislature

8-28 Administrative records

(To be divided by the Subject Device).

8-4 Military etc. correspondence.

Incidentally this gives us freedom to divide '8 Archives' on the basis of the ' type of archives '.

351D In the Decimal Classification the Connecting Symbol in Auto-Bias Device may be any one of 0005, 0006 and 0007.

See Table 2 at the end of the *Decimal classification*, 13th and 14th editions.

As no example is given in that book for its use and as we have not seen its use anywhere else, we are diffident about their use.

Examples

The results are shown only at some of the stages of procedure.

We shall begin with the book which finally gave us the clue for the idea of Auto-Bias Device, before the invention of which several books which required it had been kept aside with temporary less co-extensive numbers pending the discovery of a suitable solution.

937 PEARSON (Karl) and BELL (Julia). A study of the long bones of the English skeleton.

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Colon Number

(5) Y1 [English (territorial group)]: [Anthropometry]: [Thigh-bones]

(6) Y17561:2:136-82

Decimal Number

(5) 573·6

(6) Co-extensiveness is not reached since neither 'Thigh-bones' nor 'English' is represented.

938 JEDŁOWSKI (P.). Reversible functional changes in the optic nerve in quinine intoxication.

Colon Number

(5) L [Eyes—nerves]: [Pharmacology]: [Chincona]

(6) L185-73:63:J641

Decimal Number

Primary Phase

Secondary Phase

(Second species)

(5) 615·336

612·843

615·3360001612843

(6) Co-extensiveness is not reached since 'Quinine' is not individualised in the Primary Phase.

Note that (1) as there is no means of representing the 'Organ Facet' in the Decimal Classification, it has to be deemed a Secondary Phase; and (2) as a readymade number is given for the Auto-bias Focus 'Optic nerves' in '612 Physiology', there is no need to use the Connecting Symbol of the Auto-bias Device.

939 ARMSTRONG (Clairette P.). A comparative study of the intelligence of rural and urban children.

Colon Number

Primary Phase

Secondary Phase

(Second species)

(4) Y1 [Rural children]: [Intelligence] S [Children: Urban]: [Intelligence]

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Primary Phase

Secondary Phase (Second species)

- | | | |
|-----|-----------------------------------------------|-------------------------------------------------------------------------|
| (5) | Y1 [Children—
rural] : [Intelli-
gence] | S [Children—Urban] :
[Kept vacant ∴ implied
by the Primary Phase] |
|-----|-----------------------------------------------|-------------------------------------------------------------------------|

- | | | |
|-----|------------|---------|
| (6) | Y111-31.72 | Y111-33 |
|-----|------------|---------|

Y111-31.720Y111-33

Decimal Number

- (5) 159 9222640005992262

- (6) Co-extensiveness is not reached since 'Children'
is not individualised

Exercise

For each of the books in 940—945

A Translate the specific subject into Colon Number
showing the result at each stage of procedure.

B Translate the specific subject into Decimal Num-
ber showing the result at each stage of proce-
dure

940 PENNINGTON (J C), *etc* Conservative manage-
ment of damaged renal tissue

941 BOLTON (B) Blood supply of the human spinal
cord

942 PUNTEENY (I.) Effect of certain chemical
stimuli on calibre of retinal blood vessels

943 RABOLD (C N) and FERRIS (C C.). How country
pupils differ from town pupils

944 SIVARY (E W) and MITCHELL (Y R)
Important factors in directing the health of the college
women

945 DRYDEN (Helen) An experiment in helping
blind women help themselves [Relief from destitution].

352C When the Bias Number is applied
within a Facet of the Primary Phase, it is

MODIFIED BIAS DEVICE. In such cases, Substance Numbers or Geographical Numbers or full Class Numbers may occur as Bias Numbers and not merely full Class Numbers.

The following Rules of the *Colon classification* prescribe Modified Bias Device:

E292 of Chapter 'E Chemistry' prescribes the use of Substance Number as Bias Number within the Problem Facet or Substance Facet.

89, 8919, 89190 and 8919q of Chapter '8 History' prescribe the use of Geographical Number or full Class Number within the Problem Facet.

X9 of Chapter 'X Economics' prescribes the use of one additional Geographical Number as Bias Number within the Geographical Facet.

In chapter '9 Generalia':

Rules 1 in section '94-98 Societies to yearbooks' prescribes the use of Geographical Number as Bias Number to amplify the Canonical Numbers 4 and 5 before the Facets are attached;

Rule 2 in the same section prescribes the use of Language Number as Bias Number within the Geographical Facet; and

Rule 991 prescribes the use of Geographical Number as Bias Number to amplify the Canonical Number 9.

Since the second edition of the *Colon classification* was published we have found need to add the following Rules:

G9. When the Problem Number is 33 Metabolism or 34 or any of their subdivisions, the Substance Number and if it is absent, the Problem Number may be amplified by the Bias Number Device using for the Bias Number the number of the Substance whose influence is studied. If

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there are two or more such influencing substances the number of the first of them is to be used.

Note that a similar rule is automatically applicable to 'I Botany', 'K Zoology' and 'L Medicine'.

L99. When the Problem Number is '6 Pharmacognacy' or any of its subdivisions, the Substance Number and, if it is absent, the problem Number may be amplified by the Bias Number Device using for the Bias Number the Number of the Substance whose influence is studied. If there are two or more such substances, the number of the first of them is to be used.

Note that a similar rule is automatically applicable to 'MK Veterinary science'.

U9. When the Problem Number is '42 Migration' or any of its subdivisions, the Geographical Number may be amplified by the Bias Number Device, using for the Bias Number the number for the Geographical Area coupled with that of the Basic Number by the problem of migration. If there be two or more such areas, the first of them is to be used.

Examples

The results are shown only at some of the stages of procedure.

946 INDIAN at home and abroad [A periodical being published in Great Britain since 1927.]

Colon Number

- (5) 5 [Great Britain]: [1927]. Modified Bias Number after the Canonical Number [India]
(6) 502:3:IN27

Decimal Number

Primary Phase

(5) 052

Secondary Phase (Second species)

954

052-0001954

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- (6) Individualisation is not obtained since the Chronological Facet is not represented

Note that the *Short catalogue* of the India House Library, for example, gives only 052 as its number. Even the Second Phase is unrepresented as that catalogue was prepared before the 13th edn. of the *Decimal classification* was available, in which alone provision was made for the first time for Secondary Phase. The incapacity of '052' is shown by the fact that 14 different items receive the same number in that catalogue.

947 ORIENTAL College magazine [A Hindi periodical published in India since 1925.]

Colon Number

- (5) 5 [India]: [1925]. Modified Bias Number after the Geographical Number [Hindi]
(6) 520152:N25

Decimal Number

- (5) 059.9143
(6) Individualisation is not reached since 'India' is not individualised and the Chronological Facet is not represented.

948 ROYAL EMPIRE SOCIETY. [Founded 1868]. London. United empire.

Colon Number

- (5) 5 [Great Britain]: [1868]. Modified Bias Number after the Canonical Number [British Empire]
(6) 501.3:3:M68

Decimal Number

- (5) 062.0001942
(6) Individualisation is not reached since there is no means of indicating that it is on the 'British Empire' and the Chronological Facet has to be omitted.

Note that this will be the number for any general periodical published by any learned body on Great Britain.

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949 KUPPUSWAMY SASTRI (S.). [1880-1943]. *Ded.*
Commemoration volume: studies in Indology etc.

Colon Number

- | | <i>Primary Phase</i> | <i>Secondary Phase</i>
(<i>First species</i>) |
|-----|-----------------------------------------------------------------------|----------------------------------------------------|
| (5) | 9. Modified Bias
Number after the
Canonical Num-
ber [India] | j [1880] |
| (6) | 902 | jM80 ~
902jM80 |

Decimal Number

- (5) 042.0001954
- (6) Co-extensiveness is virtually reached, though not
to as sharp a degree as in the Colon Num-
ber.

950 EMINENT orientalists, Indian, European and
American. [The youngest included was born in the
1860's.]

Colon Number

- | | <i>Primary Phase</i> | <i>Secondary Phase</i>
(<i>First species</i>) |
|-----|----------------------------------------------------------------------|----------------------------------------------------|
| (5) | 9. Modified Bias
Number after the
Canonical Num-
ber [Asia] | w [186—] |
| (6) | 904 | wM6
904wM6 |

Decimal Number

- | | <i>Primary Phase</i> | <i>Secondary Phase</i>
(<i>First species</i>) |
|-----|--------------------------------------------------------------------------------------|----------------------------------------------------|
| (5) | 95 | 92
950.92 |
| (6) | Co-extensiveness is not reached since the
Chronological Facet is not represented. | |

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Note that there is no suitable or distinctive place in the Decimal Classification for subjects like 'Indology', 'Orientalia', and 'Sinology'. But the note 'Customs etc. of any special country go in 913-919' which occurs under '390 Customs, costumes, folklore' suggests the above number. The accommodation of 'History of civilisation' under '901' is also in favour of the above suggestion.

951 NIEUWENBURG (C. J. Van). Volumetric determination of small amounts of water.

Colon Number

- (5) E [Micromethods] : [Vacant]. Modified Bias Number after Problem Number as there is no Substance Number [Basic oxide of hydrogen]

- (6) E390210

Decimal Number

Primary Phase

Secondary Phase

(*Second species*)

- (5) 545 . 54611

545-000154611

- (6) Co-extensiveness is not reached since 'Micro-analysis' cannot be individualised and the number in the Secondary Phase represents 'Hydrogen' and not 'Water'.

Note that 'Water' does not occur in the Complete Tables of the *Decimal classification* but in the Index 54611 is given as its number. Here poverty of the Decimal Language puts us in an awkward position.

952 JAMIESEN (A. R.), etc. Determination of minute quantities of gold in urine.

Colon Number

Primary Phase

Secondary Phase

(*Third species*)

- (0) Urine Determination of minute quantities of gold

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Primary Phase

Secondary Phase

- (5) L [Urine]: [Vacant] : [Vacant] implied by Primary Phase]. Modified Bias Number after the Problem Number as there is no Substance Number [Gold]

(6) L515

E390118

L515:E390118

Decimal Number

Primary Phase

Secondary Phase

(*Second species*)

(5) 612-46163

54691

612-46163000154691

(6) Co-extensiveness is reached.

Note that the Primary Phase itself provides a place for the 'Chemical Analysis of urine' and the Secondary Phase has to represent only 'Gold'.

953 SHIELDS (J. B.). The effect of calcium and phosphorus on the metabolism of lead [in men].

Colon Number

(5) L [Vacant]: [Metabolism]: [Lead]. Modified Bias Number after the Substance Number [Calcium]

(6) L:33:1480122

Decimal Number

(5) 612-3985000154636

(6) Co-extensiveness is not reached since 'Lead' is not individualised. '88' stands only for 'Poison'.

954 ROYER (Paul K.), *etc.* Influence of digitalis on the electrolyte and water balance of heart-muscle.

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Colon Number

- (5) L [Heart-Muscle]: [Metabolism]: [Basic acid of hydrogen]. Modified Bias Number after Substance Number [Fox-clove]
- (6) L32-83:33:2100J45F7

Decimal Number

- (5) 615-711. See note under 615 7
- (6) Co-extensiveness is not reached since (i) the Organ Facet represents 'Circulatory system' and not 'Heart' and (ii) "Water" is not represented.

955 CHU (Henry P.) Chinese exclusion laws [of the United States] and its effect. 1930.

Colon Number

- (5) U [Immigration]: [United States]: [192—]. Modified Bias Number after the Geographical Number [China]
- (6) U426:73041:N2

Decimal Number

- (5) 325-251
- (6) Co-extensiveness is not reached as neither the country of immigration nor the Chronological Facet is represented.

956 FRANCO-CHINESE treaty of Nanking, 1930.

Colon Number

Primary Phase

Secondary Phase (First species)

- (5) V [France]:
[Foreign relation]: [Kept vacant implied by Secondary Phase]. Modified Bias Number after the Problem Number [China]
- q [1930]

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Primary Phase

Secondary Phase

- (6) V53:19041 qN30
V53:19041qN30

Decimal Number

- (5) 341.244
(6) Co-extensiveness is not reached because (1) the other party to the treaty is not represented, (2) it is not shown whether it is the text of the treaty or an account of it and (3) the particular treaty is not individualised.

Note that treaties go into the Main Class 'Law' in the Decimal Classification.

957 HIRESCH (Ernest E.). The Geneva bills of exchange convention, 1930.

Colon Number

Primary Phase

Secondary Phase (First species)

- (5) V [World]: q [1930]
[Foreign relation]: [Kept vacant ' ' implied by the Secondary Phase]. Modified Bias Number after the Problem Number [Bills of exchange]

- (6) V1:190X627 qN30
V1:190X627qN30

Decimal Number

Primary Phase

Secondary Phase (Second species)

- (5) 341.2 33277 -

341.2000133277

- (6) Co-extensiveness is not reached because (1) it does not show whether the book gives the

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text of the convention or an account of it and (2) the particular convention is not individualised.

958 HAWKINS (Walance). Water rights in the United States—Mexico rivers. 1931.

Colon Number

- (5) V [United States]:[Foreign relation]:[193—].
Modified Bias Numbers after the Problem
Number [Mexico] and [River as property.]
- (6) V73:190740Z102957:N3

Note that the number for 'Water rights' is got by Subject Device and the " : " in Z1:2957 is changed to " 0 " as it is used for the further subdivision in a facet which is not the last (*See* Rule 661 of Part 1 of the *Colon classification*).

Decimal Number

Primary Phase

Secondary Phase

(*See end species*)

- (5) 341.273

3339

341.27300013339

- (6) Co-extensiveness is not reached because (1)
the other party is not represented and
(2) the period up to which the study is
brought is not represented.

959 KIRKLEY (Lord). Trade openings in South Africa for Great Britain. 1931.

Colon Number

- (5) X [Vacant]:[Commerce]:[Great Britain]:
[193—]. Modified Bias Number after Geo-
graphical Number. [South Africa]
- (6) X:5:3063:N3

Decimal Number

- (5) 382

- (6) Co-extensiveness is not reached since the
parties and the period are not represented

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960 WRIGHT (Philip G.). Effects on American agriculture of the duty on Philippine cocoanut oil and copra. 1932.

Colon Number

- (5) X [Produces from cocoanut]: [Import duty]: [United States]: [193—]. Modified Bias Number after the Geographical Number [Philippines].

- (6) X9J98207:536:730931:N3

Note the number for 'Produce from cocoanuts' is got by Subject Device and the " : " in "J982:7" is changed to " 0 " as it is used for further subdivision in a facet which is not the last. (*See* Rule 661 of Part 1 of the *Colon classification*).

Decimal Number

- (5) 337-563460973

- (6) Co-extensiveness is not reached because (i) the number '6346' stands for cocoanut tree itself and not for its products, (ii) the country of origin of the import is not represented and (iii) the Chronological Facet is unrepresented

Note that the 13th edition did not admit of even this degree of approach to co-extensiveness. It would have given only 337-50973:

Exercise

For each of the books 961—978

A Translate the specific subject into Colon Number showing the result at each of the stages of procedure.

B Translate the specific subject into Decimal Number showing the result at each of the stages of procedure.

961 VINODINI. [A Telugu periodical published in India since 1933].

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- 962 INDIAN States journal. [Published in India since 1928].
- 963 RAPSON (Edward James). *Ded.* A volume of Indian studies presented by his friends and pupils on his seventieth birthday, 12th May 1931.
- 964 THOMAS (F. W.). Arthur Anthony Macdonell, 1857—1930.
- 965 COLEBROOKE (H. T.). [Born 1765.] Miscellaneous essays etc.
- 966 BHANDARKAR (Ramakrishna Gopal). [Born 1837]. Collected works ed. by Narayana Bapuji Utgiker and Vasudev Gopal Paranjpye.
- 967 GREWAL (K. S.). The vitamin A content of ghee.
- 968 HAVIV (Gertrude) and McHENRY (E. W.). The B vitamins and fat metabolism.
- 969 SUNDARAM (Lanka). International aspects of Indian migration [into British Colonies]. 1931.
- 970 TAYLOR (Paul S.). Some aspects of Mexican migration [into the United States]. 1930.
- 971 DUARTE (Adrian). Premieres relations entre les Francais et les princes indigenes dans l'Inde au XVII^e siecle (1666—1706).
- 972 SOYESHIMA (Yasoroku). Indo-Japanese [Economic] relations: an appeal to Indian friends. 1939.
- 973 FRANZ (Eugen). Genesis of the Franco-Russian treaty of commerce of March 29, 1862.
- 974 BIDWELL (Percy Wells). Our [United States] trade with Britain: bases for a reciprocal traffic agreement 1938.
- 975 MANNING (William R.). *Ed.* Diplomatic correspondence of the United States: inter-American affairs, 1831—1860.
- 976 BOSE (S. C.). Developments of Indo-Japanese trade. 1932.
- 977 DESANDRE (G. H. J.). Is the Australian [Java] sugar embargo to be abolished? 1932.

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978 VECCHIO (Adriano). Exchange of agricultural products between Italy and Czechoslovakia, 1927-29.

353 A book that stimulates other books and literature on itself is a CLASSIC.

This is strictly a classifier's definition. It naturally uses that quality of Classics which challenges a classificatory language to deal with it properly. It wants that a Classic and its associated literature must be arranged like a continuous spectrum, with nothing outside itself intervening. The different editions of the Classic itself and its several translations should occupy the centre—the umbra, as it were; and the literature on it should be spread on either side—like the penumbra—in correct filiatory order—bibliographies, catalogues and accounts of exhibitions, transactions of learned bodies, periodicals, yearbooks, reports of conferences, histories, biographies, commentaries, subcommentaries, adaptations, parodies, and criticisms bearing on the Classic.

The inherent qualities of a Classic that stimulate such auxiliary literature are that:

- (1) it has elements of permanent value;
- (2) it is saturated with the personality of the author—which in itself was very powerful and highly organised; and
- (3) it is a seminal book cutting new ground, blazing new trail, stimulating new thought and so on.

The basic sacred books of a religion are of such a nature. Any scheme of classification makes each sacred book a class by itself.

Works of poets, dramatists, novelists and other literary artists are generally of such a nature. Some schemes of classification make each such work a class by itself and also make each such author a class by himself. But

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classics are not peculiar to the main classes 'Religion and 'Literature'. Any other main class may have classics of their own. Even a subclass like 'Greek philosophy', 'Sanskrit linguistics' and 'International law' has several classics. Examples are mentioned below in this chapter.

3531 An author some at least of whose works are Classics is a CLASSICAL AUTHOR.

353C In the Colon Classification a Classical Author, (other than authors of sacred books and literary artists who are otherwise individualised and given a place in the schedule of classification), is provided with a Class Number as in his collected works are classified. The Number thus got is the INDIVIDUALISING CLASS NUMBER OF THE AUTHOR. The Chronological Number forming its Facet is the AUTHOR NUMBER as in the Main Class 'Literature'.

353C1 In the case of an old Classical Author, the Author Number may be fixed by the FAVOURED CATEGORY DEVICE instead of the Chronological Device.

See Rule 64 of Part 1 of the *Colon classification* for an account of the Favoured Category Device.

353C2 Add a WORK FACET as prescribed in 'Chapter 7 Literature' of Part 1 of the *Colon classification*. Thus each work is INDIVIDUALISED by its class number.

353C3 For further details follow Rules 65, 651, 652, 653, 654, 655 and 656 of Part 1 of the *Colon classification*.

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The results of these rules is that a Classical Author and each one of his works is given a Class Number all for himself or itself as the case may be. *

This Device is called Classic Device and it has been designed to satisfy the Canon of Classics enunciated, explained and illustrated in the *Prolegomena to library classification* (Pp. 157—163).

It may be explicitly stated that any number of any species of additional Phases may be attached to a Class Number got by the Classic Device.

The *Colon classification* gives illustration of Class Numbers built by the Classic Device in several Chapters of Part 2:—

	<i>Main Class</i>	<i>Pages</i>
L	Medicine	2.85—2.86
M	Useful Arts	2.91
△	Mysticism and Spiritual Experience	2.93—2.94
N	Fine arts	2.99
O	Literature	2.100—2.105
P	Linguistics	2.109—2.115
Q	Religion	2.121—2.128
R	Philosophy	2.135—2.152

Part 3 of the *Colon classification* gives in its Second Section an alphabetical index of all the Classics and Classical Authors whose Class Numbers are given in the above mentioned pages of Part 2.

353D In the Decimal Classification, some of the Classical Authors in the Main Class '1 Philosophy' are given individualising Class Numbers. It has no Device to individualise other Classical Authors or Classics in 'Philosophy' or in any other subject.

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Examples

The results are shown only at certain stages of procedure.

979 HARDY (G. H.). Ramanujan. [1887—1919].

<i>Colon Number</i>		
<i>Primary Phase</i>	<i>Secondary Phase (Classic Device)</i>	<i>Tertiary Phase (First species)</i>
(0) "Mathe- matics"	Ramanujan	" Criticism "
(1) B	x	:9
(2)	x [A]: [W]	
(3)	x [Author Num- ber]: [Work Number]	
(4)	x [Ramanujan]: [Vacant] absent]	
(5)	x [1887]: [Vacant]	
(6) B	x M87	:9
	BzM87:9	

Decimal Number

(5) 517

(6) Co-extensiveness is not reached at all. Such a specialised book focussed on certain mathematical problems and methods brought into discussion and investigation as a result of the work of the genius Ramanujan will be lost amidst looks of all sorts on mere "Calculus". What a deplorable misplacement!

980 DAS (Rasvihary). Philosophy of Whitehead.

<i>Colon Number</i>		
<i>Primary Phase</i>	<i>Secondary Phase (Classic Device)</i>	<i>Tertiary Phase (First species)</i>
(0) Philosophy	Whitehead	" Criticism "
(1) R	x	:9
(4)	x [Whitehead]: [Vacant] absent]	
(5) R	x [1862]: [Vacant]	:9
	RzM62:9	

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Decimal Number

(5) 192.9

(6) Co-extensiveness is not reached because (1) Whitehead is not reached and (2) it does not show whether it represents the works of the philosopher or a discussion of his system.

981 BHAGAVAN DAS Concordance dictionary to the Yoga-sutras of Patanjali and the Bhashya of Vyasa

Colon Number

Primary Phase	Secondary Phase (Classic Device)	Tertiary Phase (First species)
(0) "Yoga-Philosophy"	Vyasa Bhashya on Patanjali Sutra	Concordance
(1) R635	<i>x</i>	<i>k</i>
(4)	<i>x</i> [Vyasa Bhashya]	
(6) R635	<i>x</i> 11	<i>k</i>
	R635 <i>x</i> 11 <i>k</i>	

Decimal Number

(5) 181.4

(6) This is hopelessly far from co-extensiveness as it represents only "Indian philosophy" and does not individualise either 'Concordance' or 'Vyasa Bhashya' or 'Patanjali Sutra' or even 'Yoga-School'. Well may the heaping of the books of this class be condemned as a sheer hotch-potch without any pretence to filiatorv order of any sort.

982 McCALLUM (James Dow). Lord Morley's criticism of English poetry and prose.

Colon Number

Primary Phase	Secondary Phase (First species)	Tertiary Phase (Classic Device)	Quaternary Phase (First species)
(0) English poetry & prose	Criticism	Lord Morley	"Criticism"
(1) 0	:9	<i>x</i>	:9

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<i>Primary Phase</i>	<i>Secondary Phase (First species)</i>	<i>Tertiary Phase (Classic Device)</i>	<i>Quaternary Phase (First species)</i>
(4) O [Favoured language]: [Vacant]: multifocal] [Vacant]: multifocal]: [Vacant]: multifocal]		x [Morley]: [Vacant]: diffusal	
(5) O: [Vacant] [Vacant]: [Vacant]		x [1838]: [Vacant]	
(6) O	:9	xM38	:9
O :9xM38:9			

Decimal Number

<i>Primary Phase</i>	<i>Secondary Phase (First species)</i>	<i>Tertiary Phase (Third species)</i>
(5) δ ₂	188	[Cannot be represented]

820.188

- (6) Co-extensiveness is not reached since 'Morley' could not be individualised and consequently another difficulty arises. The Quaternary Phase 'Criticism' of Morley has to be left unrepresented.

983 EAGLE (Solomon). *Pseud.* [i.e. J. C. Squire].
Books in general 3 V.

Colon Number

<i>Primary Phase</i>	<i>Secondary Phase (First species)</i>	<i>Tertiary Phase (Classic Device)</i>
(0) "English literature"	"Criticism"	J. C. Squire's Books in general.
(1) O	:9	x
(5) O: [Vacant] [Vacant]: [Vacant]		x [1884]: [First work]
(6) O	:9	xM84:1
O :9xM84:1		

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Decimal Number

(5) 820-188081

(6) Co-extensiveness is not reached since 'Squire' cannot be individualised and consequently another difficulty arises. The 'Work Facet' appropriate to the works of Squire has to be left unrepresented.

984 SQUIRE (J. C.). Books reviewed.

Colon Number

Primary Phase	Secondary Phase (First species)	Tertiary Phase (Classic Device)
(5) O:[Vacant] [Vacant]: [Vacant]	:9	x [1884]: [Second work]
(6) C	:9 O-9rM84:2	xM84:2

(5) 820-188081

(6) Co-extensiveness is not reached for the same reasons as those stated in example 983.

Note that the specific subjects of the titles of 982 to 984 though different from one another, cannot be distinguished and individualised. The Decimal Class 820-188081 thus becomes a 'rough class' in which several subclasses get mixed up without being separated and arranged in a helpful filiationary order.

Exercise

1. For each of the titles 979-984

- Give the result at each of the stages 7 and 8 of the procedure for translating the specific subject into Colon Number.
- Give the result at each of the stages 7 and 8 of the procedure for translating the specific subject into Decimal Number.

2. For each of the titles 985-999

- Translate the specific subject into Colon Number showing the result at each stage of procedure.

- B. Translate the specific subject into Decimal Number showing the result at each stage of procedure.

Note the dates of birth and serial order of the works written by the authors concerned should be found from works of reference.

985 BALL (W. W. Rouse). An essay on Newton's "Principia".

986 ROR (Frederick William). Thomas Carlyle as a critic of literature.

987 BARTHOLOMEW (A. T.). A bibliography of Sir Adolphus William Ward, 1837—1924 etc. 1926.

988 INTERNATIONAL SWEDENBORG CONGRESS. 1910. Transactions.

989 MELAMED (S. M.). Spinoza and Buddha.

990 THOMAS (Milton Halsey). John Dewey, 1882—1939.

991 KEYSERLING (Hermann). The world in the making tr. by Maurice Samuel.

992 — The recovery of birth tr. by Paul Fohr.

993 — Art of life tr. by K. S. Shelvankar.

994 — Immortality: a critic of relations between the process of nature and the world of man's ideas tr. by Jane Marshall.

995 — From suffering to fulfilment tr. by Jane Marshall.

996 PAPPS (Mercedes Gallagher). Introduction to Keyserling: an account of the man and his work

997 JUSTINIAN. The Institutes, tr. by J. B. Moyle.

998. BUCKLAND (W. W.). The main institutions of Roman law.

999 SIVARAMAN (K. M.). Bibliography of the writings by and on ... S. R. Ranganathan (1892—). 1943

PART 4

GENETICS OF CLASSIFICATION

CHAPTER 41

CO-EXTENSIVENESS, MNEMONICS AND INDIVIDUALISATION

Historically book classification arose out of dissatisfaction with an alphabetical or accession arrangement which did not give any consideration whatever to the subject-approach common among readers. In the first attempt, books were grouped into a few broad divisions like 'History', 'Law', 'Science', 'Magic', 'Dogma' and 'Legends'; but within each group alphabetical or accession arrangement continued. This was called 'Classification'. It happened very early—even in the days of Assyrian clay-tablets.

410 EMERGENCE OF NOTATIONAL BARRIER

During the middle ages, it was felt to be 'rough classification' and to make it finer, the number of groups was increased. Gesner, for example, had about 21 groups. About a century ago, Brunet sought fineness in another way. He recognised groups within groups—9 sub-groups in the group 'Theology', 4 in 'Jurisprudence' 10 in 'Science and arts', 9 in 'Belles-lettres' and 8 in 'History'. He went a step

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further, arranging the groups themselves, and the subgroups within a group among themselves, in a filiatory order. He also used numbers to represent them and to show their ordinal position. But in each subgroup alphabetical or accession arrangement still continued. Even the 40 Brunet's classes created difficulties which discouraged further subdivision. And yet his attempt showed a new way.

411 DEWEY AND DECIMAL

Subjects subdivided and multiplied. The crowd in each class was too great. What was finer classification when compared with its predecessors came once again to be looked upon as 'rough classification'. The difficulty really turned on notation. The first to make classification finer again by breaking through the notational barrier with phenomenal success was Melvil Dewey. He realised the potentiality of decimal fraction notation to provide for filiatory interpolation of classes and their ordinal representation. With the freedom it gave, in 1876 he increased the groups at one stroke to beyond 1,000. But subjects began to multiply faster and books appeared in classes of still narrower extension. The result was that even these 1,000 classes merely meant 'broad divisions' once again; and the persistence of alphabetical or accession arrangement within each of them mixed up subjects too promi-

cuously to be of help. The very helpfulness of having as many as 1,000 classes arranged in a filiatorv order was responsible for bringing to notice in an arresting way the unhelpfulness of such mixing up within each class.

4111 RACE WITH BOOK-WORLD

Dewey found his creation too going down very soon to the status of 'rough classification'. But his decimal fraction notation was a powerful weapon and he used it incessantly to go on increasing the number of classes and thereby making it finer again and again. He brought out edition after edition, the size swelling on each occasion. By 1927 *i.e.* in about half a century he had brought out 12 editions. The number of classes had gone beyond 40,000 and the size of the schedule had grown from 12 pages to 683. And yet the race between the multiplication of subjects and the editions became even keener. In another five years, what was regarded as fine enough in 1927 was threatened once again with reduction to the status of 'rough classification'. Quite undaunted the *Decimal classification* strained its weapon of decimal fraction notation still further and took its thirteenth birth in 1932 reclaiming its right to be called 'finer classification'. This time it had swollen to 907 pages of schedule listing over 54,500 classes. It had yet to see another edition again in 1942, with a

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further increase in size. The obesity had crossed the limits of comfort and yet the cruel book-world goes on surging, putting forth new subjects and challenging it to swell still further at the peril of being again reduced in status to 'rough classification'.

4112 CO-EXTENSIVENESS—THE IDEAL

The achievement of Dewey is a marvellous step towards the ideal of co-extensiveness between a specific subject and its class number so that the books on no two specific subjects may get mixed up promiscuously, irritatingly and deceptively. The urge towards this ideal had been working in him all along, though he does not appear to have explicitly stated it anywhere.

4113 READY-MADE NUMBERS A CLOG

Now and again, he realised the futility of attempting to enumerate all the possible subdivisions of a class and give their numbers in a ready-made form. It acted as a clog. He felt that one way of checkmating the surging onslaught of the book-world and reducing the obesity of his schedule would be to share with classifiers the task of reaching co-extensiveness. He felt the need for throwing on them the duty of building up by themselves some of the class numbers at least.

4114 TACTICS OF "DIVIDE LIKE"

He succeeded to some extent in carrying out this wish by adding at several places of the Complete Tables instructions like "Subdivided like the main classification from 000—999" or "May be subdivided like 620—699" or "Divided like 940—999". The first two tricks have been christened "Subject Device" and the third "Geographical Device" by the *Colon classification* and the *Prolegomena to library classification*. These devices can take us with ease very much nearer to the ideal of co-extensiveness and they incidentally invest a scheme with a helpful mnemonic power and secure for it automatic conformity to the Canon of Consistent Order.

4115 TACTICS OF CUTLER AND BROWN

The tactics of equipping classifiers with a weapon capable of being turned on any subject at will instead of laboriously and exhaustively anticipating and providing class numbers in advance for every possible line of movement of knowledge and of books, had, however, already been familiarised by others. Charles A. Cutter had provided a separate 'Local list' or geographical schedule and a separate table of Common Subdivisions. James Duff Brown had similarly provided an independent set of 'Categorical tables'. Numbers from these can be attached to any class number to make a closer approximation to the ideal of co-extensiveness.

4116 DEWEY'S PENALTY FOR HESITANCY

Dewey, too, had used common subdivisions, but he failed to leave them in the hands of classifiers. It was not till 1932 that he saw the wisdom of doing so. It was only in the 13th edition of the *Decimal classification* published that year that the Common Subdivisions were given independent status of their own—elaborated to a considerable extent and with freedom to subdivide further according to their own laws of growth. In recognition of their freedom they were established in a separate table—Table 2 at the end of the *Decimal classification*. The penalty for his not having done it from the start, although (or is it because?) his contemporary countryman Cutter had, is the awkward situation and special adjustment referred to in the Introduction to that table:

"The following subdivisions introduced by 0, 00 or 000 may be annexed to the number for any subject if 0 or 00 subdivisions are not already specially provided under that subject. If a 0 or 00 division has been thus used in the main tables a corresponding extra 0 or 00 must be introduced before the significant digits 1—9 of form divisions here given: e.g. 352 005 represents in main tables Municipal civil service and a periodical on Municipal government will be 352.0005 and not corresponding to usual procedure, 352.05, which represents, as indicated in main tables, local government in Asia; similarly essays on Italian history (where only a single 0 is printed in the main tables) would be 945.004, not 945.04, which represents Age of the Communes.

"While variation in number of 0's used in different parts of the Classification to designate features provided for in these tables of common subdivisions may at 1st sight seem confusing, there need be no difficulty, if the classifier will, when 1 of these

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tables has to be applied, see whether a 0 or 00 has or has not been attacht to the number for the subject".

These two paragraphs show how the mnemonic advantage has been spoiled by not having made this 'Common Subdivision Device' a conscious and organic part of the scheme from the beginning. Dewey attempted to enumerate the common subdivisions under each class and thereby unnecessarily swelled the schedules and inadvertantly deviated from a consistent or mnemonic use of numbers. Nor was he able to enumerate them for every subject. But every specific subject, however minute its extension, may call for further subdivision by the Common Subdivision Device. Witness the examples and exercises in Chapters 31 and 34. The thirteenth edition, no doubt, decided to make an alliance with classifiers and shift to them the task of working out class numbers with common subdivisions. But it could not wipe out the remains of the *ad hoc* common subdivisions already scattered in the Complete Tables and reduce the obesity of the latter on account of their inconsistent and unmnemonic development we have mentioned.

4117 PHASE-ANALYSIS IMPLIED

However, the introduction of Table 2 is a definite move to facilitate easy approach to the ideal of co-extensiveness. It also implies a tacit recognition of the value of the Phase-Analysis

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described in Part 3 of this book. James Duff Brown's 'Categorical table' also implied it. But even greater clarity, economy, consistency, mnemonic effect and hospitality would have been gained if attention had been paid also to what has been described as Facet-Analysis in Part 2.

4118 DEWEY'S NICHE OF FAME

To say this is not to find fault with Dewey. He has achieved enough to be immortalised and be provided with a special niche of fame, even by his one bold attack on the notational barrier. To exploit the territory so conquered to the maximum possible extent and to consolidate the position—to do that alone—was the task of a life-time. It is easy for us who stand on his shoulders, as it were, to say "He was so near it and yet he did not reach it ;" but it would be irresponsible, ungrateful and irreverent to say so.

412 DEWEY OVERPOWERED

Dewey's first victory in the technique of classification proved so fruitful in the then state of knowledge and books that there was no immediate incentive to look ahead for dangers yet to come or to fortify the position against them. However new dangers have already come. The march of knowledge, the specialisation that is now going on to the n th degree and the minute divisions and the unthought-of cross-

sections of knowledge on which books are now being written, render even the 907 pages of the schedule of the *Decimal classification* inadequate. Its thousands of classes are virtually reduced to the status of the old 'broad divisions' within which unhelpful, unfiliatory, alphabetical scattering regains supremacy. This is keeping us once again far from the ideal of co-extensiveness.

4121 DEWEY SEEKS NEW ALLIANCE

The Decimal Fraction Notation is over-powered; it has spent itself; it needs to be reinforced by some new principle to push through the fresh, formidable notational barrier that has once again come in the way. On the simple ground of economy (which incidentally respects mnemonics) the genius of Dewey had already sensed the need for a new principle in building schedules of classification. True he has not stated this principle in abstract terms. But it is found expressed in concrete form by the provision of 'Table 3 Languages' and 'Table 4 Philological Divisions' at the end of the more recent editions of the *Decimal classification*. In the introduction to the former, Dewey writes:

"The table below includes all individual languages... To subdivide the [a] language is to prefix the language figures, as given in this table to the philologic numbers given in Table 4".

Table 4 itself has at the top:

"All the languages in Table 3 can be subdivided ... by adding the figures below".

Facet-Analysis! Meccano Principle!!

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4122 MECCANO PRINCIPLE BY DEGREES

But evidently pre-occupation with consolidation work prevented the obvious next step of providing the same language schedule for Literature also. If it had been done economy would have been ideal and mnemonics automatic. But space is wasted on Table 5 which is identical with Table 3 but for each number having an initial '8' in the former and a '4' in the latter. But at least mnemonics is retained for the numbers for languages whether they are applied to the Main Class '4 Philology' or '8 Literature'. The 14th edition has amalgamated the two tables reducing wastefulness to giving both the 4-initialled and 8-initialled language numbers in parallel columns. The Meccano Principle is thus recognised by slow degrees.

4123 DEWEY'S PENALTY FOR RESTRICTED USE

In the Main Class '61 Medicine' a splendid opportunity for similar economy and mnemonics has been missed. A different set of numbers is used for 'Organs' under '611 Anatomy', '612 Physiology', '616 Pathology' and '617 Surgery'. No subdivision on the basis of the 'Train of Organ Characteristics' is given under '618-9 Pediatrics' or under any of the subdivisions of '619 Veterinary Medicine'. This has had a deleterious effect on working out the problem divisions of 'Medicine' as minutely as modern literature demands.

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Many of the divisions of 'Medicine' are thus reduced to the status of the old 'broad divisions' and the arrangement of books is, therefore, routed once again by alphabetical scattering. Every other Main Class except 'Linguistics' and 'Literature' suffers in this way. The ideal of co-extensiveness has again receded beyond reach. That is the penalty for not extending the Merano Principle to every subject but restricting it to a few subjects only.

4124 DECIMAL BY-PASSED

The notational barrier obstructing closer approach to the ideal of co-extensiveness is formidable, even quite impenetrable, if we continue to depend solely on the Decimal Fraction Notation Principle, which is now totally by-passed by several specific subjects on which literature is forthcoming. In the examples worked out in the preceding chapters, we have come across many instances in which the Decimal Classification floundered. It could go no further towards co-extensiveness though it used to solve with grace and ease many problems in classification before the tremendous onslaught of the progress of specialised knowledge we are having to-day.

4125 BY-PASSING TO BE CHECKMATED

The Facet-Analysis Principle which has been intuitively and perhaps not quite consciously introduced for the Main Classes '4

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Philology' and '8 Literature' must be deliberately coupled with the Decimal Fraction Notation Principle. This new alliance will checkmate the by-passing.

413 INCENTIVE FOR COLON CLASSIFICATION

It is primarily to effect this alliance that the Colon Classification was devised. It has also incidentally solved many other minor problems found insoluble by the Decimal Classification. It has accepted all the fruits of the pioneering enterprise of Dewey. It has unquestioningly adopted the Decimal Fraction Notation Principle in designing its notation. It studied the forces that overpowered the Decimal Classification and the occasional, isolated uses Dewey took by stroke of sheer genius to meet them in some situations. It explored why he was unable to continue them in all similar situations. By this process it found the necessary allies for the Decimal Fraction Notation in the Principles of Phase- and Facet-Analysis—not altogether new but, as already shown, found in an incipient, nebulous form in the later editions of the *Decimal classification*. It was found that what stood in the way of Dewey fully exploiting these principles was something inherently lacking in his notation.

4131 TACTICS OF COLON NOTATION

The failure to exploit the Principle of Facet-Analysis to make a closer approach to co-

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extensiveness was due to the absence of designing a special Connecting Symbol to attach one Facet to another. This defect was removed by the invention of " : " as an ordinal number lying between 0 and 1 and using it as the Connecting Symbol. The Colon Device is therefore Device No. 1 described in ' Chapter 6 Eight Devices ' of Part 1 of the *Colon classification*. (See Rule 61). The " : " is compared in the preface of that book to " the bolts and nuts in a Meccano set ".

4132 AUTONOMY FOR FACETS

The provision of the Connecting Symbol gives autonomy, so to speak, to each Facet and a Colon Number is therefore like a federation of independent Facets, with mutual affinity no doubt but without the need for any one Facet to have its freedom or power of growth curtailed or arrested in the interests either of federation or of any federating Facet.

41321 FEDERATED NUMBER AND CO-EXTENSIVENESS

Each Facet has its own schedule of divisions, which can be expanded, within its own distinctive limits but without any interference from those of others. It can be expanded to the necessary extent to reach co-extensiveness within its own sphere. If all Facets achieve this and they are set together and linked up and held together by Colons, the resulting Colon

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Number takes us very close to the ideal of co-extensiveness, for it can individualise many specific subjects which the Decimal Number cannot.

4133 VALUE OF COLON DEVICE

We shall now illustrate the value of using “ : ” as a Connecting Symbol.

41331 AMBIGUITY AVOIDED

We shall first show how, on account of its absence, the Decimal Classification lands itself in ambiguity—the very fault whose removal is one of the aims of a classificatory language.

By using Tables 3 and 4 given at the end of the *Decimal classification*, we arrive at the same Decimal Numbers for two totally different specific subjects as shown below:—

<i>Specific Subject</i>	<i>Decimal Number</i>
Archaisms in Sanskrit	491·27
General account of Primary Prakrits	491·27

Next we shall show how the capacity to reach co-extensiveness is lost because there is no connecting symbol to fasten Facets together.

A specific subject like “ Etymology in Ur-Keltic ” is possible. Its Decimal Number should be 491·62. But the specific subject ‘ General account of Irish ’ will also get that number. To avoid this ambiguity, Table 3

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omits 'Keltic' and the result is that we have to mark the former book simply '491.6' which means only 'general account of Ur-Keltic'. Thus the freedom to reach co-extensiveness has to be surrendered.

On the contrary, with its special Connecting Symbol the Colon Classification is able to exercise its freedom. We get

<i>Specific Subject</i>	<i>Colon Number</i>
General account of Ur-Keltic	P128
Etymology in Ur-Keltic	P128.2
Elements for given idea in Ur-Keltic	P128.5
General account of Irish	P1285
Etymology of Irish	P1285.2

41332 FREEDOM FOR FACETS

Next it can be seen how the autonomy of each Facet to grow in its own way is curtailed because there is no Connecting Symbol to fasten Facets together and federate them in a gentle and harmless way.

<i>Specific Subject</i>	<i>Decimal Number</i>
Diseases of the stomach	616.33
Tuberculosis of the stomach	616.33
Tuberculosis	616.995
Tuberculosis of the lungs	616.246

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In the above the third digit " 6 " which stands for ' Disease ' has its growth arrested by being attached to ' 33 Stomach ' which belongs to another Facet. Therefore, it is unable to grow and reach co-extensiveness with ' Tuberculosis ', which it does when it is free and unattached as in the number 616·955. The result of " 6 " having been incapacitated from growing and reaching co-extensiveness results in incapacitating the federated number 616·33 also from reaching co-extensiveness. It has to represent every disease of the ' Stomach ' and so a promiscuous mixing results within that class. In 616·246 the Disease Facet is allowed to overreach the Organ Facet and grow so that that number represents ' Tuberculosis of the lungs '. But this expediency of giving freedom to ' Disease Facet ' has *ipso facto* deprived the Organ Facet of its freedom to grow.

On the other hand all this trouble is cut short by the introduction of a special Connecting Symbol in the Colon Classification. Thus we get

<i>Specific Subject</i>	<i>Colon Number</i>
Diseases of the digestive system	L2:4
Diseases of the stomach	L24:4
Diseases of the gastric glands	L246:4
Infectious diseases	L:42
Tuberculosis	L:421

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<i>Specific Subject</i>	<i>Colon Number</i>
Infectious diseases of the digestive system	L2:42
Tuberculosis of the digestive system	L2:421
Infectious diseases of the stomach	L24:42
Tuberculosis of the stomach	L24:421

The above numbers lay bare the autonomy of each facet and the capacity of the Colon Numbers to reach co-extensiveness.

41333 FREEDOM IN NUMBER OF FACETS

Further, the autonomy which is thus assured to the federating Facets makes the Colon Classification federate any number of Facets without any embarrassment or restriction. The absence of it makes the Decimal Classification hesitant. It would not dare to add to the Facets—seldom would it go beyond two. It finds itself forced to ignore Facets and thereby fall short of the ideal of reaching co-extensiveness. The remarks at stage 6 of the procedure, found under most of the examples, concern this handicap of the Decimal Classification. The Decimal Number 616 33 is to represent not only every disease of the stomach but also every aspect of handling each one of those diseases like ‘Treatment’, ‘Surgery’, ‘Diet-regulation’, ‘After-care’ and so on though etiology, diagnosis and patho-

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logy are provided for by special common subdivisions. No wonder that classes like 616 33 have to be looked upon as the old 'broad divisions'.

On the contrary, they all get subdivided and separated because of the Connecting Symbol of the Colon Classification:

<i>Specific Subject</i>	<i>Colon Number</i>
After-care in digestive diseases	L2:4:91
After-care in gastric diseases	L24:4:91
After-care in gastric infectious diseases	L24:42:91
Pathology of gastric tuberculosis	L24:421:4
Treatment of gastric tuberculosis	L24:421:6
Treatment of gastric tuberculosis by gold	L24:421:63118
Surgery in gastric tuberculosis	L24:421:7
After-care in gastric tuberculosis	L24:421:91

The above numbers lay bare the benefits that are bestowed by a special Combining Symbol and the extraordinary power to approach the ideal of co-extensiveness that the Facet Principle gives a scheme of classification.

114 VALUE OF FACET-ANALYSIS

Apart from loyalty to the ideal of co-extensiveness, even under the most formidable fire of the modern subdivision of knowledge, the alliance of Decimal Fraction Notation and Facet-Analysis implemented to the full by a special Connecting Symbol bestows many other benefits on a scheme of classification.

4141 ECONOMY IN SCHEDULE-SPACE

First, there is economy. The schedule in each Facet has to list only relatively fundamental concepts. The number to be listed in each of the federating or constituent Facets therefore, grows only in arithmetical progression. But the number of derived composite concepts corresponding with the composite numbers got by combining the numbers of the constituent Facets in all possible ways grows in geometrical progression. If we have, say, three facets with 10 divisions in the schedule of each, we have to list only 30 divisions on the Colon Principle, but 1,000 if it is not adopted. (See *Prolegomena to library classification*; Pp. 134—139 for a fuller discussion).

To put it in a more concrete way, the schedules of the *Colon classification* extend to 178 pages. Of these 33 are used up in giving illustrative schedules by Classic Device. Thus the effective number of pages is only 155. And yet its capacity to reach the ideal of co-extensive-

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ness or the number of composite classes that can be individualised is greater than those listed in the 907 pages of schedules in the *Decimal classification*. To reduce the size of the schedule to one-sixth is all-round economy—in cost and in the psychological tempo and physical energy involved in turning through the pages in day to day use.

4142 STABILITY OF SCHEDULE TERMS IN MEANING AND NUMBER

Secondly, a list of fundamental constituent ideas is more stable than a list of derived composite ones. In the first place the ideas themselves do not change their connotation or orientation as often in the former as in the latter. The fundamental ideas belong to a far deeper level. There is not usually as much agitation and turmoil at the depths as near the surface. Moreover the list of fundamental ideas needs enlargement far less frequently than the other list. The number of elements in chemistry are added to so rarely, while the number of compounds and mixtures is increased without number by all kinds of variations. So is the relation between lists of fundamental constituent concepts and of derived composite ones. Let us illustrate:

41421 BUSINESS CYCLE DEMONSTRATION

During the last ten years, many books have appeared on agricultural crisis, business cycles

CO-EXTENSIVENESS, MNEMONICS & INDIVIDUALISATION and the movement of crime statistics with business cycles. The 1932 edition of the *Decimal classification* had listed only one class involving 'Business cycle'. It was 330.124 which represented the 'Theory of trade cycles'. Though 'Business cycle' was not mentioned in the Complete Tables, the index showed the above number against it. Thus there was no means for classifiers to find class numbers for the other two topics. They had to wait till the 1942 edition came. This edition gave:

<i>Specific Subject.</i>	<i>Decimal Number</i>
Agricultural crisis	338.15
Crime and business cycles	364.26

No classifier could have arrived at these numbers; they are quite arbitrary.

In the Colon Classification, 'Agriculture' belongs to the Business Facet and 'Business cycle' to the 'Economic Facet' of the Main Class Economics and in these Facets they have the respective numbers 9J and 74. Thus any classifier will get:

<i>specific subject</i>	<i>Colon Number</i>
Theory of business cycles	X:74
Agricultural crisis	X9J:74
Crime and business cycles	Y1:450X:74

If to-morrow we get books on 'Crisis in textile industry' or 'Crisis in motor-car industry' or 'Crisis in air-craft industry', classifiers have no means of finding Decimal Numbers for them.

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They will have to wait till another edition of the *Decimal classification* lists them. But they can themselves build the following Colon Numbers for them; they will, in order, be:

X9M7:74

X9D5113:74

X9D535:74

It can thus be seen that the number of new classes to be added to the Decimal Schedule is far greater than those to be added to the Colon Schedules, as the former are composite and new ones may crop up overnight, while the latter are fundamental ones which do not take shape except at long intervals.

4143 AUTONOMY FOR CLASSIFIERS

The achievement of the Colon Classification in this matter is a great advantage. Classifiers who depend on it will not be obliged to hold up their work and look to the classificationist for the number of a new fundamental class as often as they must if they work with the Decimal Classification. This autonomy of classifiers is of considerable value.

4144 AUTOMATIC MNEMONICS

In a scheme which adopts Facet Principle or the Principle represented by the Colon Device, mnemonic representation becomes automatic: Take 'Business cycle' there is no definite digit representing it in all the three

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Decimal Numbers 380·124, 338 15 and 364·26. But the six Colon Numbers given in the preceding section show forth readily "74" as the mnemonic number for it. This is what is called 'Scheduled mnemonics' (*Prolegomena to library classification* Pp. 121—128).

4145 UNSCHEDULED MNEMONICS

Making mnemonics automatic at this level releases the classifier to pay attention to what (Same book. Pp. 129—136) has been called 'unscheduled mnemonics'. With their aid even on the rarer occasions when a new division has to be opened in the schedule of a Facet, a classifier who is well attuned can fix its number without reference to the classificationist. For all those who have absorbed the spirit behind 'unscheduled mnemonics' will arrive at the same number. We have experienced this sufficiently often to make this statement.

4146 POTENCY OF UNSCHEDULED MNEMONICS

The more the 'Unscheduled mnemonics' are worked out objectively, guided by some deep fundamental concepts, the more powerful will a scheme of classification taking full advantage of the alliance of Decimal and Colon Principles be and the more assuredly it will stand four-square against the on-slaughts of the progress of knowledge—its progressive atomisation, its endless and varied permutations and combinations, its shifting realignment of boundaries, its

surprise synthesis, in fact everything that shakes schemes of classification to their very foundation and reduces them to the limbo of old 'broad divisions' if not to unsightly debris.

4147 FURTHER ALLIANCE NEEDED

The resilience of a scheme of classification does not reach its maximum even with Facet Analysis. Forces may gather in the knowledge world and so shape the book-world that they again undermine the capacity of a scheme of classification to make the closest approach to the ideal of co-extensiveness, even though it bases itself on the secure alliance of the Decimal and Colon Principles. There are factors in the knowledge-world and more particularly in the book-world which lie outside the jurisdiction of Facet-Analysis. To bring them under control and deal with them in such a way that they do not put up a barrier in the approach to the ideal of co-extensiveness, the alliance between Decimal Fraction Notation and Colon Notation should be further strengthened.

415 PHASE ANALYSIS IS THE NEW ALLY

The Principle of Phase-Analysis developed in Part 3 of this book is the new ally to be taken. We have already stated that Cutter and Brown had shown the way. But their Secondary Phase- and those of post-1932 Dewey were mixtures. The Colon Classification has resolved them and recognised and provided different methods of treatment for three types.

4151 DEWEY'S MIXTURE OF PHASES

'Table 2 Common Subdivisions' of the *Decimal classification* is a bewildering conglomeration of several types. Commentaries on Rules 33D and 32D have illustrated this. Even the so-called "0", "00" and "000" groups of common subdivisions have no individuality of their own. Each of these subgroups is also a hopeless mixture. And the Connecting Symbols are clumsy. It is worst with '0001' which stands for the most vital connection of 'Relation'.

41511 REGRESSIVE EFFECT OF THE MIXTURE

How the conglomerate nature of the divisions themselves and the clumsiness of the Connecting Symbols confused Dewey! He began as an apostle of filiation arrangement and harnessed the Decimal Fraction Notation to dispel and kill out the demon of alphabetical scattering and its subtler and more captivating form—alphabetical mnemonics. But the confusion in question was so acute that he even recommended the sacrifice of this primary and life-long principle which had brought him all the success and all the glory that have rightly gone to him. Witness the pathos of the recommendation in the 1932 edition of the adoption—shall we say regression to—the adoption, optional though it be, of the insipid, scattering, superficial, inhuman, alphabetical mnemonics. Here is the pathetic

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paragraph taken from the introduction to 'Table 2 Common Subdivisions':

"If preferred letters may be substituted for *o*'s used in tables. As a result of careful study the following letters are suggested as bringing about by alphabetic arrangement a desirable order *d* (language, dialect), *f* (form), *k* (time, kronology), *p* (place), *r* (relation), *v* (viewpoint)".

4152 RESOLUTION BY COLON CLASSIFICATION

The Colon Classification resolved them, in the first edition, into two types: the 'Common Subdivision' and the 'Point of View' or 'Bias'. In the second edition, it separated from the latter a third type which it has called the 'Last octave' and 'Penultimate octave'. It uses distinctive Connecting Symbols for all the three species of Secondary Phases, so that they are easily recognised and, what is more, specific subjects which differ only in having Secondary Phases of different species get grouped according to their Secondary Phases and the groups themselves follow one another in a helpful filiatory order.

The Connecting Symbols are devised with great economy and in organic relation with the notational principles of Facet-Analysis.

4153 LAST AND PENULTIMATE OCTAVE

Of these the third species (those managed by the Last Octave and Penultimate Octave Principles) is the most fascinating and potent one. It could also be said to mark a highwater mark of notational achievement and elegance.

Its discovery was made when the second edition was going through the press and some of the schedules in Part 2 had been printed. We were denied the opportunity, therefore, of taking full advantage of its potency and chopping off some more of the divisions enumerated in the schedules of some of the Facets. The slimness that will be obtained by doing so will make the schedule even more compact and graceful. We hope to do it in the next edition.

A visualisation of the reason why the terms 'Last Octave' and 'Penultimate Octave' were coined will be found, along with an account of the mathematical significance of the Device in the theory of pure ordinals, in the *Modern librarian*.*

4154 BIAS DEVICE

The separation of the Third Species from the Second Species of Secondary Phase has to some extent reduced its flaccidity. Its Connecting Symbol is quite simple. The method of attaching this species to the Primary Phase is called Bias Device. Along with its degenerate forms of Auto-Bias Device and Modified Bias Device, described in Chapter 35 of this book, it has made its own contribution to the making of a closer approach to co-extensiveness.

* RANGANATHAN (S. R.). Impact between mathematics and library science. (*Modern Librarian*. V. 10. 1940. Pp. 22-33).

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4155 COMMON SUBDIVISIONS DEVICE .

The first species of Secondary Phase, called Common Subdivisions, was the first to be perfected. They may be said to have come out in the Colon Classification even in the first instance "full as an egg". On the notational side it is remarkable for some bold tricks.

41551 NEED FOR CONNECTING SYMBOL EVADEN

The need for a Connecting Symbol was by-passed by using a distinctive species of symbols to represent the Common Subdivisions themselves—the lower case letters of the Roman alphabet (to be in italics when printed). If we remember that more than half the volumes in a library need class numbers with a Common Subdivision, we can realise how much is gained by not having to write an extra Connecting Symbol in their case. The advantage is indeed so great that the *Prolegomena to library classification* (pp. 163—175) has gone to the extent of improvising a special canon to emphasise the economy it effects. It is called the Canon of Distinctiveness.

41552 PRIORITY SECURED

A second triumph of the Colon Classification in the matter of Common Subdivisions is the securing of priority in arrangement for a specific subject with this Secondary Phase over the ones which have their Primary Phase either bare or followed by Secondary Phases of

other species. What enabled it to secure this is Rule 0241 of Part 1 of the *Colon classification* which reads:

"0211 Any number followed by a small letter shall have precedence over the number itself

eg B631 has precedence over B63 L23 45a has precedence over L23 45".

The possibility of such a trick is again a demonstration that the declaration of independence of ordinal numbers against cardinal numbers is full of potentialities which await to be made manifest and available for use.

41553 VALUE OF ANTERIOR POSITION

What is secured by the Common Subdivision Device of the *Colon Classification* is described by Bliss who has developed the term 'Anterior position' in this connection. (See *A system of bibliographic classification* pp. 15). He says:

It seems more convenient to collocate the general treated generally with the special treated specially, and to follow that with the special treated generally, than it would be to interpose the large mass of miscellaneous and auxiliary material between the general and the closely related subordinate special items. Many classifiers will agree with the reasons stated above and will place these (miscellaneous and auxiliary) items anterior to the general subject and its subdivisions. In the order of books on this order of classification, it seems more convenient to have the reference auxiliary and miscellaneous items of general scope precede the special and to avoid placing them between the general subject and the special treatment of it, followed by the general treatment of its special branches. The anterior position for them (reference, miscellaneous and auxiliary items) is the most distinctive as well as the more convenient"

In other words an anterior position for specific subjects with common subdivisions will be more helpful and filiatory. It is a stroke of good fortune that this was secured by the Colon Classification by such a neat and simple notational device.

41554 FAILURE OF DEWEY

In the Decimal Classification, the Connecting Symbol ' 0 ' interpolates Common Subdivisions between the basic class and its subordinate divisions based on its own distinctive characteristics. It thus fails to secure " anterior position " for the Common Subdivisions.

41555 FITTED WITH FACETS

Another outstanding feature that distinguishes the treatment of Common Subdivisions by the Colon Classification is the provision of Facets for most of them. They are Geographical and/or Chronological Facets. There are Rules in Chapter 2 of Part 1 of the *Colon classification* which define these Facets and the way in which a Common Subdivision Digit should be amplified by them. In result the purpose served by these Facets is to reach almost absolute co-extensiveness in specific subjects which involve Common Subdivisions like ' Bibliographies ', ' Laboratories ' ' Exhibitions ', ' Institutions ', ' Societies ' ' Survey or descriptive account ', ' History ', ' Biography ', and ' Collected works and selections '. It also secures

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‘ Individualisation ’ of works when the Common Subdivision is ‘ Memorial volumes ’, ‘ Periodicals ’, ‘ Yearbooks or directories ’, ‘ Conferences ’, ‘ Acts or bills or codes ’, ‘ Reports ’, ‘ Statistics ’, ‘ Commissions or Committees ’ and ‘ Collected works and selections ’.

41556 VALUE OF FACETS

This is a new and helpful feature. Sets of periodical publications, for example, are arranged by the Colon Notation in quite a filiatory way. The absence of a similar device in the Decimal Classification, or for the matter of that in any other scheme, reduces the subclass ‘ Periodical Publications ’ in any class to a hotch-potch in which order has to be maintained by means other than notational—an obvious mark of defeat. In academic and business libraries where periodical literature is the very essence of their service, there is literally no filiatory arrangement or mechanisation of it among periodicals when they are classified by the Decimal Classification. This problem has been completely solved by the Colon Classification.

41557 CONVERSION OF WORK INTO CLASS

The Common Subdivision Device, as developed in the Colon Classification, converts each periodical into a distinct class *i.e.* a periodical is INDIVIDUALISED *i.e.* no two periodicals can have the same Class Number. So also in the case of

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yearbooks, directories, conferences, acts, reports, commissions and committees. It is usual to call them 'Form Classes'.

416 INDIVIDUALISATION

The concept of 'INDIVIDUALISATION', needs examination. It is not exactly co-extensiveness, although in some cases it may mean that alone.

4161 INDIVIDUALISATION OF SUBJECT

The specific subject 'Algebra', the Colon Number 'B2' and the Decimal Number '512' are co-extensive. The numbers 'B2' and '512' therefore individualise 'Algebra'. The specific subject 'Christian theology', the Colon Number 'Q6:3' and the Decimal Number '23' are co-extensive. The numbers 'Q6:3' and '23' therefore individualise 'Christian theology'.

The specific subject 'Avoidance of contract in British Law', and the Colon Number 'Z3:3:4' are co-extensive and this Number therefore individualises the above subject. In the Decimal Classification, it has to be put in the more extensive class '347.4 Contracts in British Law' and this Number does not therefore individualise it. The specific subject 'Life of Kierkegaard' and the Colon Number 'RM13' are co-extensive and this number therefore individualises the above subject. In the Decimal Classification, it has to be put in the more extensive class '109.2 Lives of philoso-

phers' and this number does not therefore individualise it.

In the above cases, individualisation is equivalent to the class number reaching co-extensiveness with the specific subject. In other words, it is the specific subject that is individualised.

4162 INDIVIDUALISATION OF WORK

On the other hand, consider 'KOLLOID Zeitschrift'. So far as its specific subject is concerned, the Colon Number 'E235' and the Decimal Number 541.3452' both individualise it, since they are co-extensive with it. So far as subject matter is concerned the INDIVIDUALISATION has been completed by these numbers. But 'E235_m' and '541.345205' carry the individualisation further on the basis of the form of exposition. Thus we use the term INDIVIDUALISATION to show achievement other than co-extensiveness with the subject matter expounded. Once INDIVIDUALISATION is detached from co-extensiveness and is made to refer to matters other than subject matter, we shall extend its use still further. The Colon Number 'E235_m55:N06' carries the INDIVIDUALISATION further than E235_m or its Decimal synonym 541.345205; in fact it INDIVIDUALISES the work itself. Now this is a great advantage in library arrangement.

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INDIVIDUALISATION is thus used also in the sense of INDIVIDUALISATION OF WORK. In the Colon Classification, works which expound in the form of 'Memorial volumes', 'Periodicals', 'Yearbooks and directories', 'Conferences', 'Acts, bills or codes', 'Reports', 'Statistics', 'Reports of commissions and committees' and 'collected works and selections' are INDIVIDUALISED. In the Decimal classification, INDIVIDUALISATION is not reached in this sense.

41621 POTENCY WITH CLASSICS

INDIVIDUALISATION is only another name for the CONVERSION of the work itself INTO A CLASS by itself. In almost all schemes Sacred Works are so individualised. In some schemes some literary works like the dramas of Shakespeare are individualised. In the Colon Classification, all literary works are individualised without any exception. It goes even further. INDIVIDUALISATION or 'Conversion into a class by itself' is attained in the case of all CLASSICS and Periodical Publications also. This is a great advantage as it automatically leads to the assembling of all the auxiliary literature on a classic next to the work in the most helpful order. (See section '353 Classic Device' of Chapter 35 of this book). This is another achievement of far-reaching advantage. It helps the fulfilment of the Laws of Library Science in an unthought of, but much needed, direction.

4163 INDIVIDUALISATION OF BOOK

The Colon Classification individualises books (not works, it must be noted) in another way. In this, a book is not converted into a class by itself. A BOOK NUMBER is added after its class number, separated by some space (or written below it), in order to distinguish it from the other books belonging to the same class. The combined class number and book number thus got is called CALL NUMBER. (See Rules 01, 011, 012 and 0121 of Part I of the *Colon classification*).

41631 BOOK NUMBER

The need for individualising the books belonging to the same class has been felt ever since Dewey made classification practicable and scientific. Several attempts have been made to build helpful Book Numbers. Various have been the trains of characteristics chosen to build them.

41632 AUTHOR MARKS

Author Marks like Cutter Numbers, Merrill Numbers, Jast Numbers and Brown Numbers have been built upon the basis of author-characteristic. But they do not individualise

- (1) different copies of the same book;
- (2) different editions of the same book;
- (3) different volumes of a multi-volumed book; and in some cases
- (4) books by different authors the first

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three letters of whose names are identical.

41633 DATE MARKS

The year of publication is another characteristic on which the building of Book Numbers has been based by some. Biscoe numbers invented in 1885 are a well known example of this kind. This is better than Author-Marks. But even here the different volumes of a multi-volumed book are not individualised.

41634 LANGUAGE MARKS

There is also another characteristic that deserves consideration—the language of the book. It is not helpful to mix up in a class all the books written in different languages. Readers will feel happier, their time will be saved and their psychological tempo will be preserved at a pleasant level if separate language groups are formed among the books that have the same specific subject. The need for this has been felt by the Classification Décimale. But it has achieved this by loading the already overcrowded or over-lengthened class number.

4164 COLON BOOK NUMBER

The Colon Classification is perhaps the first to achieve strict and absolute INDIVIDUALISATION OF THE BOOKS in a class by a system of BOOK NUMBERS built in organic relation to the class numbers themselves in such a way that books

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having the same specific subject stand automatically divided into different linguistic groups; those within each linguistic group are arranged by their date of publication; and the volumes of a multivolumed book also are individualised and yet obliged to stand together.

It is unnecessary to give here full details of the method of building Colon Book Numbers. They are found in Chapter 02 of Part 1 of the *Colon classification*. A detailed comparative study of different kinds of Book Numbers will be found in the *Prolegomena to library classification*, Pp. 175—180.

CHAPTER 42

PROBLEMS, SOLVED AND UNSOLVED

We are now in a position to collect together some of the unsolved problems in classificatory technique. Before doing so it may be helpful to recapitulate what has been solved.

420 DIVIDE AND RULE

In Chapter 41 we saw how several problems in designing schemes of classification had been successively solved. Their solution varied with their nature. And yet most of them involved one fundamental principle. The invention and sharpening of the devices used in the solution depended on a prior separation of the problem into their simpler elements. The closer the analysis and the nearer it took us towards the elements, the more powerful and successful could be the devices. It is the coalescence of several difficulties—an alliance on their part—that baffles us. DIVIDE AND RULE is an efficient method as much in subduing them as it is in political sphere. It is further the only one of the classical PANCHA TANTRAS (Five methods) available in the sphere of classification.

4201 ANALOGY IN SCIENCE

It is the same as in physical and natural sciences. The successive isolation of the mole-

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cule, the atom, the electron, the neutron and the positron are the landmarks in the progress of the former, which gave increasingly superior control over the subject. The successive isolation of the tissue, the cell, the cytoplasm, the protoplasm, the nucleus and the gene are the landmarks in the progress of the biological sciences which helped to devise more and more powerful techniques to probe into the mysteries of life.

4202 A MORAL AND A SAFEGUARD

A further separation of even greater potency is that of action in living body from action in test-tubes—biophysics and biochemistry from ordinary physics and ordinary chemistry—and global view from partial view as in the separation of field psychology from the ordinary one. This again has led to the invention of extraordinary devices and new attitudes which take us nearer to an understanding of the mysteries of life. This is a fundamental turning point in the progress of science. It has taught us that the final stages in a solution will involve not abstractions alone—not merely qualities which uniformise everything but also what Blake calls ‘individuating particularities’—not analysis alone but synthesis as well. One must develop devices to keep vital wholes intact, respecting their unanalysability, and yet understand their mysteries and put them to the best use.

4203 RESPECT FOR INTEGRATED WHOLFS

This respect for integrated wholes is in demand in book-classification too. Books (embodied thought) are, in the ultimate, manifestation of the continuously varying unique protoplasm and may, therefore, turn out to be equally protean and unique. As in natural science and psychology, so in library classification. A stage will be reached—particularly with seminal books (the classics of Chapter 35) when efforts to reduce them to fixed and rigid formulas will be defied. Like protoplasm they will lose their identity when sliced with the mental microtome; they will become like microscopic preparations, lifeless and useless. A realisation of this factor too is an essential in inventing devices as austere abstraction and ruthless resolution.

421 SOLVED PROBLEMS

Let us now review, from this fundamental angle, the classificatory problems already solved.

4211 FIRST LANDMARK

The first landmark in the progress of classificatory science was the separation of the finding out of the specific subjects of books and that of mechanising their arrangement without the need for *ab initio* determination on each subsequent occasion. The device that emerged from this first act of separation was the TRANSLATION of specific subjects into ORDINARY NUMBERS.

4212 SECOND LANDMARK

Dewey forged this device as an act of intuition but did not exploit its possibilities fully as it was not objectively recognised and pursued. The Colon Classification filled up this gap. As stated in the *Prolegomena to library classification* (Pp. 191—195) its success turned on the enormous freedom gained by SEPARATING ORDINAL AND CARDINAL NUMBERS and making the former declare independence of the latter and live to the fullest height of their suppleness. This is the second landmark.

4213 THIRD LANDMARK

A device which has proved most useful is the use of DECIMAL FRACTION NOTATION instead of that of Decimal Integer Notation. This also we owe to the genius of Dewey. The adoption of this, he invented because he could see the difference between showing a new subject somewhere and finding for it the right filiatory place among those already in existence. This recognition again was by sheer intuition and is the third landmark.

4214 FOURTH LANDMARK

But the Decimal Fraction Notation proved inadequate to achieve fully all that is implied in the recognition of the difference mentioned above. It had already become necessary to evolve a set of canons to guide a critical scrutiny of schemes of classification. Such canons

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may also, if sharp enough, help those who design schemes of classification. W. C. Berwick Sayers stepped in here and paved the way for an objective analysis of the intuitive achievements of Dewey. He developed a set of CANONS OF CLASSIFICATION and isolated several of them and among them was the Canon of Hospitality. This is the fourth landmark. Bliss too added his own quota at this stage.

4215 FIFTH LANDMARK

The *Prolegomena to library classification* pursued this process of isolating canons still further. By analysing objectively what had been done intuitively by the Colon Classification, it discovered that the 'Hospitality' isolated by Sayers and provided for by Dewey was a treacherous compound—not an element. It divided it into its ultimates. 'Hospitality in Array' and 'Hospitality in Chain'. It further found that the device of Decimal Fraction Notation used by Dewey met only the needs of Hospitality in Chain. To provide for Hospitality in Array quite independently without its identity being lost by coalescence with the other, it found that the Colon Classification had brushed up and given full scope to the OCTAVE PRINCIPLE (See *Prolegomena to library classification* Pp. 100-101). This step in 'Divide and Rule' is the fifth landmark.

4216 SIXTH LANDMARK

The Decimal Fraction Notation proved inadequate in another way. A class may subdivide itself along several lines—on the basis of different trains of characteristics. Dewey had seen this. He had 'divided' and his schedules often contain in one and the same array classes derived by different trains of characteristics. But he could not 'rule' them. This may be put in another way. His microtome dissected and separated the different sections (trains of characteristics): they were mounted on separate slides and stained; but in this process the original was permanently dismembered. He could not find any means by which the sections could be re-assembled and the original revived with all the inherent power of the parts and the whole to grow in their respective ways. It is just this that the COLON DEVICE has managed to do intuitively. This book has now objectively analysed this problem. The process taken up to the point reached by Dewey (his 'Divide without Rule') has been called FACET ANALYSIS. To stain the Facets, so to speak, in a differential way, and allow them all to be assembled together so as to form the unmaimed whole and even get them distinctively displayed in the class numbers is the achievement of the Colon Device. This is the sixth landmark in overcoming difficulties. The Auto-Bias Device described in Chapter 35 of this book

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makes the 'Rule' prevail effectively even within one and the same Facet.

4217 SEVENTH LANDMARK

To divide books into those that are seminal and unanalysable and those that are not, has been an important problem. This was referred to in section 4203 of this chapter. The 'Rule' that should follow this 'Divide' requires that all the auxiliary literature that usually grows round a 'Classic' should be clustered round it. Classification should mechanise such a clustering arrangement for a classic and its growing family of literature. The Colon Classification managed to effect 'Rule' in this matter by its CLASSIC DEVICE. This is the seventh landmark which redeems classification to some extent from the reproach of overlooking imponderable, vital, distinctive qualities.

422 UNSOLVED PROBLEMS

But the number of classificatory problems that are yet to be solved are even more numerous. Perhaps some of them are insoluble and compensation must be sought in the library catalogue, shelf-display and reference service. Let us isolate some of the unsolved problems

4221 FIRST UNSOLVED PROBLEM

We shall begin with the unsolved problems associated with Facet-Analysis. The Colon Classification is able to assemble the Facets of

all specific subjects belonging to the same Main Class in ONE MODE ONLY. It is not able to allow different modes of assemblage of Facets for different specific subjects as demanded by their specificity. The commentaries on Rules 701 and 801 of Part 1 of the *Colon classification* calculate the number of modes of arrangement possible. But the Rules themselves single out one particular mode for adoption with blind uniformity in all cases. Here the Colon Classification has managed to 'Divide' but is unable to 'Rule'.

The discomfiture due to this inability to 'Rule' even after having 'Divided' was brought home to us pointedly by Mr. Das Gupta of the Delhi University Library when he was with us last academic year. At the moment we could only cover our shame and wriggle out saying "Shelf-arrangement is LINEAR ARRANGEMENT as we have it to-day. It is all an ONE DIMENSIONAL AFFAIR. A suitable device will be forthcoming to provide for different modes of arranging facets according to specificity, when the physical correlate—such arrangement—will admit of display of books not only in one (linear) dimension but in many dimensions so as to visualise all kinds of affinities. We even went into a possible design of stackroom for such a multi-dimensional display. But we concluded that it would involve increase of area

of stackroom beyond possibility even when we wanted to have a two-dimensional display.

We gave it up in despair at that moment, as grappling with this problem was like embracing an octopus. The experience had been so depressing that we are loathe to reproduce here even the particular group of books with which we experimented on that occasion.

Nevertheless the problem is real and must be solved someday by somebody if we are to implement all that Facet-Analysis has brought to light. Perhaps the methods of non-associative and non-commutative algebras will show the way to solution. The assemblage of Facets has thus given rise to Unsolved Problem No. 1.

4222 SECOND UNSOLVED PROBLEM

Let us next concentrate on a single Facet and see what difficulties it may present. The number of divisions that may have to be opened in an array may be many. The Octave Principle is no doubt ready to accommodate any number of them. But then they are unforeseeable. The order in which books drive us to open new divisions is fortuitous. If we open them just in the order in which they get embodied in books, their filiation order would be lost and it will cease to be classification.

To meet this difficulty and to secure automatic conformity to the Canon of Mnemonics, Dewey used the Geographical and Subject

Devices. But he had used them indifferently to open new divisions in a Facet as well as to fit up new Facets to the original one. The Colon Classification separated these two applications of these devices—the Colon Device did it automatically—and also used them more often for the former purpose. It increased Hospitality in Array by using the Chronological Device also for the same purpose. The use of Subject Device and Chronological Device in the same array may create ambiguity since the initial digit is a capital letter in the Subject Number as well as the Chronological Number.

The Colon Classification believes that such a competition will not arise between these two devices. If this belief turns out to be a certainty, there will be no problem. But who can assert? Who knows what surprises development of knowledge may spring on us? If a situation arises demanding the use of both the devices in the same array, a serious problem will arise for solution. This could have been totally avoided if a new species of symbols (say letters of the Greek alphabet) had been used as initial digits of Chronological Numbers. But it has not been done to avoid too much deviation from 'Purity of Notation'. The result is that we have always to labour under the threat of this Unsolved Problem No. 2.

4223 THIRD UNSOLVED PROBLEM

It may happen that a specific subject involves two divisions of the same facet. It may involve them in one of two ways: either it may be a comparative study of the two divisions like 'Conception and perception' or a selective study like 'Veins of the liver'. Dewey does not resolve these two types and suggests the use of the Connecting Symbol '0005' for either case. The Colon Classification uses Bias Device for the former and the Auto-Bias Device for the latter. We get a comparatively short notation in the latter case. But the notation is unclean in the former. A neater solution for it and a further resolution of the ways in which the two divisions may be together involved in a specific subject await study. This is Unsolved Problem No. 3.

4224 FOURTH UNSOLVED PROBLEM

When Auto-Bias Device is used, there is no definite rule to settle in what order the constituent divisions should be set. The same difficulty arises in multiphased specific subjects also—in what order should the phases be assembled? At present the practice is to assemble them in the order which, the classifier feels, the nature of the subject demands—in other words as common sense directs. But common sense has the knack to fail us in uncommon situations and uncommon situations are by no means uncommon in book world.

Even otherwise it often betrays us to the Canon of Consistency. For common sense may direct in one way in January and in quite another in February in difficult cases. Thus Auto-Bias and Phase-Analysis 'divide' successfully but are unable to 'rule' consistently. The removal of the question from the jurisdiction of unaided common sense is Unsolved Problem No. 4.

4225 FIFTH UNSOLVED PROBLEM

There is the deliberate introduction of ambiguity by Rule 241 of this book which directs that a Facet is to be kept vacant for any of four different reasons:

- (1) It may have every possible focus;
- (2) It may have two or three ... or $(n-1)$ of the n possible foci;
- (3) It may be diffuse without any definite focus: or
- (4) It may be totally absent.

The Colon Classification has succeeded to 'divide' them in this way but is unable to 'rule'. The *Prolegomena to library classification* (Pp. 143—149) has even formulated the Canon of Partial Comprehension to invite attention to this problem. But it has also stultified itself, and applying the binomial theorem in defence, sought to prove that it is futile for Classification to solve the problem but that it should leave it to the Catalogue. The Catalogue can make analytical entries for each of

the foci and also list them in the main card itself. This is only evasion. The problem of making distinctive provision for various kinds of partial comprehension, full comprehension, diffusion, and total absence, nevertheless exists in classification. It is Unsolved Problem No. 5.

4226 SIXTH UNSOLVED PROBLEM

There is a case where no scheme has so far succeeded even to 'divide' completely, let alone 'rule'. It relates to Phase-Analysis. The Decimal Classification is able to distinguish only two different species of Secondary Phases—Common Subdivision as one, and all the others rolled together as the other. It uses '0' and occasionally '00' and '000' as the Connecting Symbols for the former species and '0001' for the latter.

The Colon Classification has recognised three species: Common Subdivision, Last or Penultimate Octave, and all the others rolled together as the third. It uses '0' as the Connecting Symbol for the last and calls it Bias Device.

The very definition given in Rule 302 of this book implies that the Secondary Phase of the Second Species is a mixture. Though no scheme has so far succeeded to 'rule', the definition manages to 'divide' and mention at least three different sub-species:

- (1) Written for those interested in the Bias Class;

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- (2) Showing the influence of the Bias Class; and
- (3) Instituting comparison with the Bias Class.

A more powerful analysis will be able to 'divide' still further and lay bare various other categories varying from one another in subtle ways. These have yet to be isolated and provided with distinctive Connecting Symbols. This is Unsolved Problem No. 6.

4227 SEVENTH UNSOLVED PROBLEM

It is true that, as stated in section 4217, the Classic Device has succeeded in solving the important problem of handling the Classics in a specially delicate way, so as to ensure the keeping together of all the associated literature on a classic with the classic itself at the centre. But the notation used by the Colon Classification to effect this places the families of classics amidst 'Selections' and just before 'Syllabuses' and 'Catechisms'. It is difficult to assert which is the most fitting place for them; but it cannot be the one shown to them by the Colon Classification. No doubt the practical classifier's definition of a classic given in section 353 of this book shows that it is only time that will decide whether a particular book will have to be treated as a classic or not. The first indication of an author being eventually included in this category is the publication of his

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collected works. To individualise these the Colon Classification uses the Common Sub-division *x*. If his works eventually turn out to be classics, they need not be lifted and transplanted elsewhere, if the Classic Device also uses *x*. That is the motive behind the treatment given to Classics by the Colon Classification. What about the older classics whose status as classics had been accepted centuries ago? Can they at least be not given a better place? The Colon Classification would say, "Yes, it may be possible. But it is not wise. We cannot use one device for old classics and another for modern, contemporary and the yet-to-come ones". This is not a question that can be easily settled and it has not yet been settled to the full satisfaction of the Laws of Library Science. Hence it must be counted as Unsolved Problem No. 7.

423 OTHER UNSOLVED PROBLEMS

These are typical major problems that need solution. But the unsolved problems are really far more numerous. Here are some more.

4231 SELECTION AND REJECTION

. In Bias Phase and particularly Modified Bias Phases, several Bias Numbers may claim representation. At present we select one and leave the rest to be looked after by the analytical entries of catalogue. Take for instance the specific subject of example 947: The effect of

calcium and phosphorous on the metabolism of lead. On the Modified Bias part of the Substance Facet we were able to represent only Calcium and translate the subject into the Colon Number L:33:1480122. For Phosphorous we have only to provide a cross-reference entry headed by the Colon Number L:33:1480151.

Again when we have a specific subject involving the mutual relation of two or more countries, which is the order in which they should be taken? Take for instance the specific subject of example 950: Franco-Chinese Treaty of Nanking, 1930. We have arbitrarily taken France first and got the Colon Number V53:19041qN30. Can it not be V41:19053qN30? No doubt we partly meet the difficulty by giving a cross-reference entry with the latter number at its head.

It is usual to say let French libraries use the former number, the Chinese the latter and the others as they please. This detracts from one of the very purposes for which a classificatory language is specially designed *viz.* to have one and only one number for each specific subject. There must be some sharp device that will solve this problem.

4232 A PERENNIAL PROBLEM

There are several classes—particularly the canonical classes of Useful Arts (and there can be myriads of them)—for which trains of

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characteristics have not yet been assigned. Even among those which have been provided with formulae of characteristics, the schedules of the fundamental constituent terms of each facet may require augmentation both in array and chain. It is very pressing in 'Chemistry' particularly. In the Decimal Classification, which lists derived composite classes, this problem is quantitatively greater. 'There can be no end to this problem. As long as man continues to think, this problem will exist.'

4233 COSMIC CONSCIOUSNESS

There is next the problem of unscheduled mnemonics. Decimal Classification has not faced it at all. The influential Congress Classification has not adopted scheduled mnemonics even. But the more diversified knowledge becomes the more bewildering will be the task of building the schedules and using them unless unscheduled mnemonics are released from the sole charge of intuition and brought to conscious level. The *Prolegomena to library classification* has dealt with them objectively and systematised them to some extent—more as a sample than as an exhaustive attempt. This requires deep inner life and viewing the perfect organisation and inter-relation that prevails among all things—tangible and intangible, real and ideal, past, present and future—a cosmic consciousness.

4234 LENGTH OF NUMBER

There is again the question of the length of class numbers. Is the Canon of Relativity enunciated in the *Prolegomena to library classification* (Pp. 78—92) acceptable? Or is an upper limit to be accepted as Bliss would have it? Even if the former position is taken, there is no doubt that other things being equal a shorter number is preferable. This means that there should be incessant effort going on to find more and more powerful devices to make the class numbers shorter and shorter. This question of length of class number is examined in greater detail in 'Chapter 51 Reflections and Fundamentals'.

4235 IMPONDERABLES

There are also certain qualities of books which do not appear to be amenable at present to be translated into any artificial language—particularly a classificatory one. They are discussed in the next chapter. They too present a problem which must engage the attention of the profession till the number of untranslatable ones is reduced as much as possible. That something is possible in that direction has been demonstrated by the invention of the Classic Device described in section 353 of Part 3 and evaluated in sections 4217 and 4227 of this Part.

424 BOOK NUMBERS

Book numbers too claim attention and raise new problems. This year we had to solve one

of its kind while preparing an individual's bibliography. How to secure the bunch of reviews of a book (not a classic) next to the book itself. As the book is not a Classic, its class number cannot be of help. Finally we decided to add " :9 " to its book number and amplify it by 1, 2, 3 ... to differentiate the several reviews. This automatically arranged all the reviews immediately after the book itself.

We are yet unable to bring together all the editions of a book which is not a classic.

425 THE FUTURE

It is not possible to make an exhaustive list of all the unsolved problems. Fresh ones will crop up any moment. Some will be minor and some major. Some can be tided over without any undue recoil; but occasionally a complete burning of boats may become necessary. The flow of new problems will continue so long as man continues to add to knowledge—by a re-permutation of known things, or by making new discoveries. There are always men in the world who find happiness only in creative work. One nation may feel exhausted and rest but another will carry the torch, then another and then another and so on. As a library is concerned with all knowledge—no matter in what part of the globe it is originated or in what language it is expounded, the library profession will have for ever to face this question of unsolved problems.

4251 THE REAL WORLD

Yes. This will go on for ever except perhaps in the imaginary world in which psychologically conditioned citizens are kept in unthinking contentment through the provision of elaborate standardised amusements by a benevolent government conceived on Platonic lines. In the real world in which we live, however, the library profession cannot rest on its oars. It must go on re-conditioning and sharpening the classificatory language continuously and at all times.

4252 AN ANALOGY

Imagine craftsmen who are building a settlement, with a chest of drawers full of instruments, only some of which are well arranged, and the usage of which is only partly known. Imagine that, from behind, new instruments are continually put into the drawers. that some instruments are modified by unknown people and that the craftsman learn to use some of the old instruments in a way hitherto unknown. Now imagine further that the plans dealing with the building of the settlement are changed too. That resembles to some extent the situation created by the world—the ever-changing world—of knowledge and printed materials for these engaged in designing and applying library classification.

4253 LOTUS EATERS

It is surprising how in the face of this continuous flux, anybody in the profession can say, "Good old Dewey said the last word in the good old seventies. I would rather go on in the rut cut by him".

Death is the end of life; ah, why

Should life all labour be?

• * *

Is there any peace

In ever climbing up the climbing wave".

Tennyson's *Lotus eaters*.

Perhaps the underlying reasons for the pathological inertia and conservatism of helplessness of this sort are many-sided.

4254 PRIMEVAL SLIME

It may be that there is some fundamental flaw in human nature, a taint, perhaps inherited from the primeval slime which renders human life capable of rising to a given level, but incapable of going beyond it, or indeed even of maintaining itself at the level which has been reached. In that event, we must look forward to a reversal of civilisation to earlier and more primitive levels of existence.

4255 BUILD ANEW

Or it may be that its inertia springs primarily from a deep-seated reluctance to face up to the inescapable fact that this is an age of major revolution in thought and a blind refusal to realise that adaptation must also be radical.

When a crisis comes and a scheme of classification is washed off its feet, it is pathetic to find ingenuity and energy spent in seeking to prop up, extend and elaborate what is admittedly derelict instead of the concentration of the whole and undivided effort or mind on designing and making ready to build an entirely new one.

4256 AN ASIDE

Though this book is not circumscribed in any way by latitude or longitude, while at this point we cannot altogether escape the consequences of having been born and brought up in India and at the present time. A single aside may therefore be permitted.

42561 THE WEST

America and Europe have to go on with an out-moded scheme though they have found that "owing to lack of adaptation to changed condition "Dewey" is out of touch with modern knowledge, it has lost contact with the stock and demands of the libraries which use it" (*Library Association. Great Britain. Record. 1933. P. 243*). That is because it is almost impossible economically to re-classify their vast libraries. Let not, therefore, the fact that the Decimal Classification is still in vogue in the West be used as an argument for the new libraries of India being yoked to it.

42562 INDIA

In India most of the libraries are unclassified and many of those that are classified are relatively small. Even those that profess "Dewey" use a "Dewey" mangled beyond recognition and therefore bereft even of the few good qualities of the original.

42563 LABORATORY SHIFTS TO INDIA

The fact, therefore, that Western libraries committed to the Decimal Classification find it difficult to cope with the modern

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expansion of knowledge, should be taken, on the contrary, as an opportunity for Indian librarianship. A great responsibility indeed is laid upon us to make use of the fact that our libraries at present are practically virgin soil; it is here that new problems can best be met: the laboratory shifts to India.

42564 INERTIA

Only inertia can pretend to argue against this. It used to make us complacent and say: why should we weave cloths as Manchester does it for us; Why make cars as America is making them? It would make us depend for our umbrellas on Austria, for our toys on Japan; our lubricants and the very salt without which our food would be inedible, our inertia used to make us wait to get from abroad. Are we to be intellectually helpless as well and miss a splendid opportunity that comes our way now or never?

42565 AWAKENING

No. India has begun to shake off her slumber and is awakening. Her sons in other fields have begun to exert themselves—in mathematics, physics, chemistry, technology, biology, textiles, heavy manufactures, literature, economics and law. Let it not be said that her sons in the library alone were still found to be inert and inactive like lotus-eaters.

42566 INTERNATIONAL ASPECT

This is not prompted merely by narrow nationalism. There is also an international aspect of this question. The Shavian definition that a gentleman is one who returns to the community at large as much as he receives from it is as applicable to nations as to individuals. This principle in international ethics has its counterpart in international economics: a country's exports and imports should be equalised. Otherwise disequilibrium sets in and this injures everybody in the world—not merely the poorer countries but also those with excess of exports. The recent International Wheat Agreement among the United Nations seeks to implement this important principle in international economics. Implementing it in regard to the other material commodities will follow.

This principle of 'give and take equally' needs to be implemented no less in regard to imponderables—the intellectual

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and spiritual factors. The world at large will ultimately suffer if any nation attempts to help the formation of a one-way flow of the results of research and intellectual advancement. No nation should arrogate to itself the monopoly of such activities nor should any nation seek to thrive solely on ideas brought on board the ship from foreign lands. Either type makes itself equally responsible for retarding the progress of the world at large.

Let us, therefore, shake off the nineteenth century sloth of utter dependence and cheerfully bear our share in equalising India's 'give and take' in the progress of ideas in library science.

So much for the aside. Let us now resume our main course of thought.

4257 AVOID ILLUSIONS

The library profession of the world at large should be progressive and should be ever attending to the sharpening of its classificatory technique, to meet the rolling onslaughts of modern knowledge. It should guard itself against inertia setting in. It should also guard against illusions which may 'side-track' and wither away its energies. Let us conclude this chapter by referring to one such illusion which has till now wasted many brains and spilt much ink.

4258 ILLUSION OF LAY-OUT

The illusion is that a scheme can be judged by the filiatory order or otherwise of its lay-out—its main classes. Sayers set the ball rolling. Bliss has chased it through several pages of his book and the *Prolegomena to library classification* also fell under the spell of that ball

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and devoted 15 of its 282 pages to running after it. After so many pages had been wasted, wisdom seems to have dawned on it; for it concludes (P. 210):

“ Altogether, then the order of the main classes in the lay-out of a scheme of classification is not of much moment so long as it is reasonably tolerable ”.

42581 FUTILITY OF SURFACE LAY-OUT AS A CLUE

The fact is that there are, for example, 3,628,800 different ways of arranging the ten main classes of Dewey among themselves.

Whichever order is adopted, therefore, it will always be easy to pick holes. No doubt, of the millions of ways, many, certainly, will be quite unacceptable; but still there are atleast a dozen that can be justified as sound. That is what the law of large numbers teaches us.

It may be clear, however, that the mere surface lay-out of a scheme gives no real clue to its soundness. That is proved only if lay-out corresponds with the greatest possible dissection of the universe of knowledge *in depth*. In other words: if the designer of a classification is an undisciplined superficial amateur with no real experience or power of analysis, his scheme will be sound only for classes of the first two or three orders. But a really ‘ penetrating ’ scheme will make possible a helpful

filiatory sequence through the classes of all the higher orders as well. The surface filiation *i.e.* of the classes of the first order or the lay-out is no criterion of anything but itself.

42582 THE REAL TEST

The real test is this: Can a given scheme immediately fix the *distinctive* filiation position of new classes of knowledge and construct for them: corresponding class numbers? Is it equipped with the necessary apparatus to achieve this? Are these apparatus such that any classifier can use them by himself and construct new numbers without asking the designer for help, except perhaps in extraordinary situations created by an altogether brand-new fundamental concept having been invented? It is from this point of view that a scheme should be examined.

This means that the profession should not waste time, thought, energy, paper or ink on improving the lay-out or justifying it in existing schemes. It has been said that the wise Cambridge Philological Society has a bye-law that none of its members should discuss the origin of language! It is time that the Library Associations of the world legislated that no librarian should discuss lay-out of schemes of classification.

CHAPTER 43

ON EDUCATION AND CLASSIFICATION AND ON CANALISATION AND TRANSLATION

The preceding chapters imply that classification is an ever-growing technique. It is a creation of the library profession. It is now claimed to be an artificial language. This marks the present stage in its evolution. To keep it ever efficient, the services of creative and well-disciplined minds are needed.

Is all this much ado about nothing? Is it an attempt to mystify or look learned? There is said to be an inevitable tendency on the part of those engaged on work in a particular sphere to elaborate a professional technique, which has the advantage not only of facilitating communication and understanding among themselves but of deterring outsiders from participating in the professional mysteries. Is the invention and use of classificatory language due merely to this human frailty?

431 APOLOGIA

To clear layman's mind of all such suspicions, one must begin at the beginning and examine the means of education, assess the value of libraries as one such means and describe the role of classification in libraries. It is also necessary to lay bare the limitations

of classification and link it up with the other factors in the service of the library and show where, when and how it fulfils itself.

4311 EDUCATION

Classification is a means of a library fulfilling itself; a library itself is a means of education. Education is the process of helping the unfoldment of personality; apart from physical, emotional and spiritual development, the unfoldment involves mental growth. Mental growth implies cultivation of intellect and enrichment of memory. The motive force for these is interest and curiosity and one of the formative forces is imitation with its back-current of counter-imitation as Tarde* puts it.

4312 FAMILY AND COMMUNITY

The family was for long the only agency to provide for the play of imitation. Exceptional children always went outside and used the community (local and immediate) as a second means. The increasing pre occupation of man in the economic struggle for existence made these two agencies eventually set up the formal school as a third means of education, reducing their own function to a preparatory one.

4313 FORMAL SCHOOL

The formal school itself soon felt some insuperable difficulties. The variegated and

* TARDE (Gabriel). *Laws of imitation*. 1913.

accelerated growth of the facts to be known and the limited period for which alone the school can have a pupil in its tutelage made the school feel itself going beyond its depths. It was overpowered. It had to look for a fourth means of education which can come to its rescue. It wished to reduce its own function largely to that of preparing the pupil to derive the fullest benefit from the fourth means.

43131 EXTERNALISED MEMORY

First about the acceleration at which new facts get created in our days—new inventions, discoveries, modifications, improvements and data touching every phase of life. It is found impossible to load the memory of pupil with all known facts and still more so to anticipate the new ones that may come into existence during his later life and fill his memory with them also. The progressive loading of the curriculum has reached a breaking point. The time has come, so to speak, 'to externalise memory' *i.e.* make one depend for facts and information not solely on one's own memory but also on reference books of all variety, scope and range. The provision of these and the making of them readily available to one and all according to their precise needs and without loss of time is beyond the province of the school. It demands a new agency—a fourth means of education. The school can only prepare pupils to use that agency with ease and profit.

43132 INTENSIFIED SPECIFICITY

Again though a person is discharged by school, his education does not stop. Thus he is once again thrown back on the society amidst which he moves as the only means of his further education. But by this time the specificity of his intellectual growth has become very much pronounced. It is more difficult now than during childhood to find superiors or peers, contact with whom will cultivate his intellect. His further education requires that he should observe and get stimulated by the working of the intellect of those who have his specificity and are perhaps found only in far-off lands or have been dead long since. To provide facilities for this is again beyond the province of the school. It demands a new agency—a fourth means of education. The school can help only in preparing the pupil to benefit from that agency with ease.

4314 FOURTH MEANS OF EDUCATION:
THE LIBRARY

What can function as the fourth means? Surely it must be an institution which specialises in collecting the intellectual and informational output of all lands and all times. And it is the library. But this should re-adjust its outlook, technique and personnel, if it is to take up this human service. It must put in the forefront of its objectives, not the mere preservation but the furtherance of the use of its

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collections. It must organise and arrange them according to their specificity so that anyone can use them readily as his 'externalised memory' and pick out with ease what he needs for his distinctive further education. This means minute, individualising classification and exhaustive, analytical catalogue.

4315 ROLE OF CLASSIFICATION

The sharpening of these tools to the finest degree of efficiency should not be obstructed by the myth that 'the man in the street' cannot use them by himself. These highly evolved tools should be designed primarily for the use of the reference staff to determine the specificity of books, so that without any fumbling about or loss of time they can put each reader along side those books with which alone he can best resonate. Readers, too, may use such tools unaided to a varying extent in the measure of their intelligence, capacity and familiarity. But providing a competent staff with an urge for service and aiding them with an ideally sharp scheme of classification are necessary steps for the library to fulfil itself as the much-needed fourth and culminating means invented so far for universal, perpetual education.

4316 CLASSIFICATION: A NECESSITY

Classification thus becomes one of the unavoidable incidents in broadening education

into a great highway whereon all can travel to the end of life. It is a technique that is inextricably involved in education—education which is not merely the progressive unfoldment of the personality of each individual to the fullest extent and at his own speed but also a composite social process whereby organised community itself develops its own personality and efficiency. The invention of classificatory language is, therefore, not a mere professional indulgence but a necessity brought on the library profession by its new primary mission of education.

432 RECAPITULATION

Now that the emergence of classificatory language has been described, let us before going into its limitations recapitulate what has been said about it in the preceding chapters. In Part I we said that the class numbers compose an artificial language designed to mechanise the filiationary arrangement of specific subjects. Any such classificatory language has its own dictionary (schedules). If it is to form a true dictionary and not a mere phrase-book, the schedules will list not names of specific subjects (derived composite terms) but only basic concepts (fundamental constituent terms) out of which the names of specific subjects can be built up. And for building them up, grammar (rules) is indispensable.

4321 CLASSIFYING

To classify a specific subject is to translate its name from ordinary language into the preferred classificatory language. For this purpose the classifier must learn to use the grammar and the dictionary of the latter. The function of the dictionary (schedules) is not to translate but to make comprehensible—to give explanations, not equivalents. The function of a grammar is to explain the mechanics of the language. The classifier should not, therefore, expect the schedules to give ready-made class numbers. Nor need schedules be constructed as if such expectations are justified.

4322 DECIMAL SCHEDULES

When the 14 editions of the *Decimal classification* are compared we see how slow has been any recognition of this principle. Yet every successive edition gives increasing evidence of its unconscious working (*e.g.* the supplementary tables 1—4 and the prescription at several points in the Complete Tables to divide as 94—999 or 0—999 or 62—699 etc.). The basic structure of the Decimal Language, however, is such that it is now unable to take full advantage of this principle. It is doubly unfortunate that some of its adherents should regard this incapacity as a virtue not to be lost on any account.

4323 COLON SCHEDULES

The Colon Language is so designed from the very start that its dictionary and grammar are

confined to their legitimate function as aids to translation: they are not more or less fortuitous collections of specimens of translations.

433 TRANSLATION

Like all others the Decimal and Colon Languages are necessarily conventional and cannot be used without a knowledge of the conventions they obey. But translation into them differ in some respects from those into ordinary languages.

4331 LITERARY TRANSLATION

In the process of literary translation a continual, subtle interchange takes place between two equally plastic elements, till their differences are resolved in a final adjustment. Since both parties to the intercourse (both languages) are, so to speak, living personalities, only a living personality can result: it is an unpredictable child that embodies imponderables from either side and can itself be judged only as a unique personality. And the same partners may produce other children, each perfect in its own way as an expression of their union but bringing out, now more, now less, of this or that capacity or characteristic of his parents—the same text, if it is at all highly organised, may be ‘perfectly’ translated in different ways. Perfection here is not scientific because both terms are almost indefinitely variable.

4332 CLASSIFICATORY TRANSLATION

But a classificatory language is invariable and translation into it is, therefore, a steady one-way process which can have only one conventionally perfect result. Not only is the result formally pre-determined, but the process also is governed by the fact that one pole is fixed; the whole operation is canalised in the translator's mind by his knowledge of the fixed form, which therefore operates like a magnetic field.

The effect of the scheme of classification in the determination of the specific subject may be visualised in another way. "A thin plate of metal ... is mounted in a horizontal position ... A small amount of sand is sprinkled over the plate, and a violin bow is used to set the plate singing ... The sand dances about and is soon thrown from the vibrating parts of the plate and collects at the nodal lines." A beautiful pattern—Chladni's figures—is formed (*See* pictures on Pp. 174 and 176 of *Sound* by Arthur Taber Jones, 1937). The pattern is determined by the vibrating qualities peculiar to the plate. So also the Phase- and Facet-Analysis is peculiar to the classificatory language will throw the name of the specific subject of a book into a distinct form.

For the classifier in whom Phase- and Facet-Analysis have become second nature, classification is an almost automatic process: his thought

is guided from the start by the preferred scheme of classification.

4333 CANALISATION

A critical examination of the language of the title and of the contents of the book is a necessary precaution against ambiguity, vagueness and rhetoric. The classifier must be prepared to fill up ellipses. This examination should follow the route prescribed by the needs of the preferred classificatory language. In dealing with connotation—the adherent as distinguished from the inherent signification—the translator has a delicate task before him. He must have a keen eye for specific details. His purpose should be to bring out the dominant specific subject (Primary Phase) in full and the adjectival ones (Secondary and other Phases) in due subordination and in proper sequence so as to expose the heart of the author's intention and achievement. He should suppress his own personal views (Canon of Reticence: *Prolegomena to library classification*. P. 68) and translate faithfully and faultlessly. To lay bare the specific subject of every book in this way would be a tortuous and wasteful task without the aid of the matrix supplied by the scheme of classification. All this preliminary analysis for the enunciation of the specific subject in the form demanded by the classificatory language, is 'Canalisation'. Proper

GENETICS OF CLASSIFICATION

translation depends almost entirely upon correct canalisation.

4334 TRANSLATION PROPER .

Once canalisation is completed and the name of the specific subject settled by pouring (so to speak) the properly selected, prepared and amplified words of ordinary language into the mould made with the aid of Phase- and Facet-Analysis, the final step is a simple affair of substituting from dictionary (schedules)—occasionally with the aid of grammar (rules)—equivalent ordinal numbers for the selected words. This last step is translation proper. It is here that real metempsychosis takes place—the same soul appears in a new body, the old one having been made of words and the new one being made of ordinal numbers.

434 ADVANTAGES

Classificatory translation has some advantages over literary translation. It is, therefore, easier to become an adept in the former than in the latter, although a correct understanding of the substance and familiarity with the subject are equally essential in both.

4341 APPREHENSION MECHANISED

While ordinary translation too involves a preliminary canalisation (transposition — or *anvaya* as it is called in Sanskrit), its matrix is not as rigid as that of the classificatory one.

CANALISATION AND TRANSLATION

While its plasticity has a value of its own as indicated in section 4331, it is less powerful in mechanising apprehension.

4342 FLACCIDITY AVOIDED

In ordinary translation great vigilance is required to avoid falling into allied processes of paraphrase, adaptation, imitation, even perhaps unconscious parody. The unwary translator may fall victim to them even in the stage of canalisation. But the austere precision of a classificatory language makes such vices of translation almost impossible. The translator will rather err on the side of too great terseness or meagreness than towards flaccidity or elaboration.

4343 AMBIGUITY REMOVED

A classificatory language, itself entirely without vagueness or ambiguity, removes them from the 'text' it translates. But this will work smoothly only if the Canons of Enumeration and Context (*Prolegomena to library classification*. Pp. 69-72) receive full attention in the work of translation. In the dictionary of a classificatory language, the arrangement of words is not alphabetical (which has no relation to sense) but filiatory or systematic as determined by sense. Thus the very position of every word enables the translator to keep clear of all ambiguity.

4344 FIXITY SECURED

Usage in ordinary language continually changes—sometimes suddenly (for example during wars or other great historical crisis) but for the most part imperceptibly, so that the translator can hardly take note of it. But a classificatory language is designed to stop such changes absolutely. This again greatly reduces the difficulties of translation.

4345 IDENTICAL VERSION ASSURED

There is a legend that 70 Greek translators of the Hebrew Scriptures, each of them shut up in a separate cell without any sort of communication, produced verbally identical versions. Nothing short of the inspiration of the Holy Ghost indeed can explain this. But a classificatory language makes this miracle the norm: every translator (classifier) who uses the means provided will arrive at the same result (class number): translation has been made a science.

435 IMPONDERABLE MISSED

The advantages of a classificatory language are in fact scientific advantages. Its matrix shapes the name of the specific subject as mechanically as the microtome cuts sections of protoplasm. It evidently fails where artistic (let alone inspired) translation succeeds in transmitting the imponderable: all that belongs to atmosphere and personality evades its formal

net. Besides these general qualities there are also certain classes of books which classificatory language cannot define.

4351 MESSAGE MOCKS

There are for example books with a *message*. They abound in Religion and Literature but may also occur (according to its own canons) in any subject that is treated from the centre with sufficient power and insight. They are seminal books. Here are some examples:

1. NEWTON (Isaac). Principia.
2. DARWIN (Charles). Origin of species.
3. STEINER (Rudolf). Problems of world economy.

They are so fundamental and dynamic that they open new vistas of thought. It is beyond the power of classificatory language to bring out their seminal quality. It is no doubt a mockery when a classification scheme obliges the classifier to give them the same class number as for ephemeral text-books ostensibly covering the same main class:

- e.g. 1. BOWLEY (Arthur). A general course of pure mathematics from indices to solid geometry.
2. SCOTT (George G.). The science of biology.
 3. THOMAS (S. Evelyn). Elements of economics.

The Colon Language has managed to separate the seminal books in a subject from the others by its Classic Device as stated in Chapter 35.

4352 FLAIR FLOUTS

Then there are books written with *flair*—so alluring that it is we who are devoured by them: they so capture us that we turn their pages as if they were pages of time itself. Here are some examples:

1. HOGBEN (L.). Mathematics for the million.
2. WELLS (H. G.), *etc.* Science of life.
3. COLE (G. D. H.). The intelligent man's guide to the world chaos.

It is such books written with extraordinary vigour that make reading popular. When classificatory translation stands flouted by their flair, there is no denying that it has failed miserably.

4353 ORIENTATION OUTWITS

Then there are books more and more valuable nowadays, that *orient* the reader among specialised subjects whose inter relations are dealt with nowhere else. Here are some examples:

1. NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS.
United States. The place of mathematics in modern education.
2. THOMSON (J. A.). Introduction to science.
3. KIRCKPATRICK (E. A.). Sciences of man in the making.

Quite apart from the needs of a man of general culture, such books may lead the specialist into

wider horizons. It is no doubt sad that a classificatory language should be outwitted by their orienting quality.

4354 STANDARD STUPEFIES

There are of course dry-as-dust merely mechanical books, of all sorts and standards. There is no means of fixing a standard for standards. They vary from time to time and place to place. We have only to compare the books prescribed for the same level of examination in the different universities of the world and in the same university at intervals of say a hundred years. To make confusion worse confounded the publisher takes law into his own hands and himself marks a standard. There is again the disturbance caused by the language of exposition apart from the difference in the level of ideas. One has finally to ask how many standards are to be recognised. Does standard grow by jerks so that we can count the number or does it grow continuously and present a spectrum which defies enumeration? In such bewildering circumstances how is one to judge standards absolutely? The question of standards appears to stupefy even experts in the field of knowledge concerned. At a meeting of an august academic body, lists of text-books were once presented for examinations for the same year. A young wary, fellow pointed out that the same book found a place in the lists prescribed for examinations of totally different

standards. The experts were apparently so stupefied that they voted down his proposal that the lists concerned may be rectified and brought up later. No. Classification should not get itself entangled with this will-o-the-wisp of standard. The Colon and the Decimal Languages dare not face them—not that the question of standards is immaterial—but because it is so elusive. In our *Library administration* we have passed this question on to administration and recommended the use of temporary extra-classificatory ‘Sequence Symbols’ to be added above class numbers and to be changed from time to time.

436 IMPONDERABLES EVADED

If a classificatory language cannot, it also need not, distinguish books according to their more subtle qualities. That is the work of the reference staff. These have to be appraised differently for different readers according to the subtle traits of their own. It is a rule of the game of life that service to living man should at the ultimate stage be done only by living man. Mechanical aids stop short of that stage. It is like the rule of the game in hockey that the ball should be put into the goal only by one who is inside the ring. This does not mean that he should do all the running up and down the field passing the ball at all times from stage to stage. If the other players do all this efficiently, the one inside the ring will have the

necessary freshness to do his job unerringly. The other players therefore fulfil themselves by making everything ready for the man inside the ring to attend to the ultimate act without any distraction or prior wearing out.

437 FULFILMENT

So it is with classification. Classificatory translation has fulfilled itself as soon as books have been in every other way fully individualised and arranged in the most helpful filiator order and made more usable by their mnemonics. This lays them ready to the hand of the reference staff whose business it is to match their untranslatable human qualities with the reader's needs. When the reference staff succeed in it the library fulfils itself. This final fulfilment is best assured when the classificatory language retains its own fulfilment.

438 NOTES ON EXERCISE

Students of Classification should have as much drill in Canalisation as in translation proper. In the examples and exercises given till now the titles were so tell-tale that they did not give sufficient scope for cultivating the power of Canalisation. It is only actual books placed in the hands of students that will do so. We cannot obviously do that while teaching the student through this book. Even the mention of a few titles that exact much work at the stage of Canalisation may not be of use, since copies of them may not be available to all the students. This exercise must really be set by the teachers themselves. That explains the first of the exercises set below.

But even teachers may find it difficult to find enough books without call numbers marked on them to be given for exercise in Canalisation. Let us, therefore, mention a method that we have been using now for years. We usually prescribe select articles in the *Encyclopaedia Britannica*. We have found the 1929 edition quite unsuited for this purpose. Its articles are too atomised. The 1910 edition has quite a number of articles that lend themselves to be set for exercise in Canalisation.

The articles given in the second of the exercises mentioned below are samples of those actually used in the class-room.

CANALISATION AND TRANSLATION

In a yearly course of three terms, we have found it profitable to begin exercises in Canalisation in the second term.

EXERCISE

1 Each week, get about a dozen of the new books received in the library and for each of them

- A Determine the specific subject and explain the route you followed in Canalisation
- B Translate the specific subject into Colon Number showing the result at each stage of procedure
- C Translate the specific subject into Decimal Number showing the result at each stage of procedure.

2 For each of 1000—1008, which are articles in the eleventh edition (1910-1911) of the *Encyclopædia Britannica*

- A Determine the specific subject and explain the route you followed in Canalisation
- B Translate the specific subject into Colon Number showing the result at each stage of procedure
- C Translate the specific subject into Decimal Number showing the result at each stage of procedure.

1,000 LABOUR legislation.

1,001 LAMENTATIONS.

1,002 LOWELL Institute.

1,003 M

1,004 MACAULAY (Thomas Babington).

1,005 MAGNA Carta.

1,006 MEDICAL education.

1,007 MEXICO (First article).

1,008 PITHECANTHROPUS erectus.

PART 5

REFLECTIONS AND TRANSLATIONS

CHAPTER 51

REFLECTIONS AND FUNDAMENTALS

We shall conclude with some of the many reflections that the solution given in the next chapter will stimulate in thinking men.

511 FIGHT AGAINST LENGTH

अर्धं मातृलाघवं पुत्रोत्सवं मन्यन्ते वैयाकरणाः

It has been said that the joy brought to a grammarian by the saving of a fraction of a phoneme is as much as the birth of a son would bring. So it is with those engaged in designing schemes of classification. They will sacrifice anything and they will strain the last nerve to save a digit in the class number or a line in the schedule. The only thing that sets a limit to the grammarian's urge for economy is that the expression should not thereby lose in clarity. So it is in classification. The ideal of establishing co-extensiveness between the class number and the specific subject it represents and of maintaining filiatory order among specific subjects is paramount. The urge for shorter notation should not detract us from reaching this ideal. Subject to this fundamental and

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unalterable desideratum, the entire skill of the library profession should be mobilised to fight against length of individual class numbers and of the schedule which helps their construction.

5111 LENGTH OF SCHEDULE

The Colon Device and the Facet- and Phase-Analysis are powerful weapons in shortening the schedule, without any harm to filiatory order or any detraction from the ideal of co-extensiveness. They take us a long way in shortening the schedule. Perhaps one may even risk the conjecture that the best that can be done in the matter has been done by them, except that as we have already stated in Chapter 42, Phase-Analysis stands in need of further scrutiny and sharpening. It is difficult to guess what notational barrier will develop and block our way when it is done. If it does, some device more powerful than any invented so far will have to be discovered.

512 LENGTH OF CLASS NUMBER

But we have not made an equal approach to the ideal in regard to the length of class numbers. An obvious method to shorten class numbers is to lengthen the schedule of Main Classes. But there is a limit set on this method by the paramount ideal of filiatory arrangement. This statement requires elucidation. For this we must begin at the very beginning. It is worth spending some time over it.

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5121 NATURE OF KNOWLEDGE

Library Classification is concerned with the Universe of Knowledge. This universe is one in which

- (1) the number of classes is infinite;
- (2) new classes are ever coming into existence; and therefore,
- (3) at any moment several of the classes are unknown;
- (4) a new class may happen to develop along unthought-of cross-sections of the universe of knowledge; and
- (5) it may demand, for filiation placing, any place anywhere (in chain and array) among the classes already known and accommodated.

5122 ELEMENT OF INDETERMINATENESS

The last-mentioned quality of the universe of knowledge involves an element of INDETERMINATENESS, which is at the root of all difficulties and, in particular sets a limit to the method of lengthening the scheme of main classes in order to shorten the length of individual class numbers.

If the number of classes and their filiation positions be absolutely DETERMINATE, we can represent each class by a distinct single-digit ordinal number and we would reach the ideal in the matter of shortness of notation, without sacrificing any of the paramount ideals men-

tioned. Formally, *i.e.* from the point of view of notational form, there will be no need then even to speak of main and subordinate classes.

5123 'CEILING' FOR NUMBER OF MAIN CLASSES

Since they are not determinate, we are obliged to represent several of them by two or more digits and this involves inevitably the singling out of some classes as formal main classes. The subdivision of a formal main class demands theoretically infinite hospitality in array and in chain. If the number of formal main classes goes beyond a certain number, it is probable that some of the chains of classes will involve inter-lacing so to speak. This conjecture needs verification and when we possess a method to verify it, it may also incidentally help us to determine the upper limit to the number of formal main classes that can be had—the 'ceiling' so to speak.

But we need not wait till this is done. Our mental capacity itself sets a limit to the number of distinct ordinal digits that can be handled with comfort. Here again we can only assert that a limit certainly exists. What exactly that limit is has yet to be determined. It is a problem for experimental psychology to solve.

For our present purpose, however, it is sufficient to postulate the existence of such a limit.

5124 MEETING INFINITY

With that granted the construction of class numbers to represent specific subjects in the universe of knowledge with its five-fold qualities including the one involving the element of indeterminateness amounts to constructing an infinity of ordinal numbers using as base a finite number of ordinal digits. It follows that, as the number of known specific subjects increases, the average length of class numbers will also increase. For the only two principles of number-building so far available are the Decimal Fraction Principle and the Octave Principle. Both these imply ultimately the addition of an extra digit to represent every new class.

To shorten the average length of class numbers, therefore, we must discover some other new principle of building ordinal numbers from a limited number of basic ordinal digits, to be used independently or in combination with the Decimal and the Octave Principles. We want a method by which a set of consecutive digits can be condensed into a single digit or at least into a smaller number—say as $a_1 + a_2 + \dots + a_n$ is replaced by A_n or $\sum_1^n a_r$ in algebra.

. 5125 SĀNSKRIT ALPHABET

It needs investigation, for example, what economy will result if we choose for the basic

ordinal digits the letters of the Devanagari (Sanskrit) alphabet, which provides devices to combine two or more basic digits into a single digit (*e.g.* Conjunct consonants, and consonant-vowel combinations). What about Chinese alphabet?

5126 A NEW SET OF SYMBOLS?

Or, will the library profession eventually gain courage not to be bound by existing conventional symbols and to invent its own system of an optimum number of basic ordinal digits with devices to combine and condense several of them into a single digit which is simple and easy to write?* Till this happens, the average length of class numbers is bound to grow with the increase in the number of specific subjects that come to be written upon—particularly with the increase in the degree of their intensification. To fret about this and to sacrifice therefore the paramount ideal of co-extensiveness and filiation order will be like cutting off one's nose to spite one's face.

5127 PRICK THE BUBBLE

This brings to our mind another bubble that has long been moving about unpricked among libraries. "Such a scheme (with possibilities of long class numbers) may be needed in academic libraries. But, a simple scheme will do for ordinary public libraries": a remark like

* We disclaim any desire to start inventing arbitrary symbols: this is only a counsel of despair.

this is often heard. It betrays a double ignorance.

By an ordinary public library is usually meant a collection of books where specific subjects are of a small degree of intension. But, then, such subjects will automatically get only short-class numbers. Most of them will be single-phased and perhaps many even single-faceted. A classifier in such a library may not have occasion to use what is described in Part 3 of this book or of anything but a small fraction of what is given in the later chapters of even Part 2. As the saying goes, 'One gets what one deserves'. A specific subject will get only the length of class number that it deserves in virtue of its degree of intension. This is so true in any properly designed scheme of classification that there is no need whatever to invent a sop like "Small libraries may work their numbers to three digits only".

Perhaps the then opposition to classification used length of class numbers as the last ditch so persistently, that the shrewdness of Dewey led him to invent this sop as a temporary palliative. But it is nothing short of grotesque if the grown up profession—why profession alone, even the management and the reading public who are no longer toddlers in library matters—still insists on the use of such a sop.

5128 BEWARE OF ILLUSION

This illusion will no longer persist if we realise that class numbers constitute a language. We do not have one language for children and another for the older people. They both are the same language—only the range of their vocabulary varies. We do not have one language to express simple ideas of small intension and another for ideas of great intension. We use the same language for both—it is only the idiom, the turn of expression, the range of vocabulary, the variety of construction and the connotation that differ. So it is with classificatory language. The same language will serve a child, a rustic, a learned man, a poet and a seer. Each will exploit it only in the measure of his need and capacity. So it is with classificatory language. The same scheme of classification will serve a school library, a college library, a university library, a public library, and a business library. Each will exploit it only in the measure of its need and capacity. There is no danger whatever of any library swallowing more of a scheme than what it can, and suffer thereby. Such a contingency is automatically kept out.

Ultimately, opposition to the adoption of an infinitely hospitable scheme of classification boils down to the inability of the smaller public libraries to afford the provision of reference

assistants to act as 'translators' or intermediaries between the public and the books. If it is uneconomic to give individual attention on such a small scale, let us take a hint from the London Underground Service and use automatic servants. To meet the need for assistance, shelf-guiding must be carried out to a far higher standard than at present. This, however, is a problem for administration, not classification.

5129 HOW TO COMPARE LENGTH

If this be realised, it is waste of time to compare the lengths of class numbers in two schemes of classification to determine their relative merit. No scheme defined by a disciplined mind will be wasted in notation. If it were, it would be still-born. But if one still wants to compare lengths of class numbers, one should keep clear of certain pitfalls. Of course, nobody will be so childish as to pick out any class number at random from, say, scheme A and similarly any at random from scheme B, compare their lengths and announce his finding as a true measure of the relative length of notation in the two schemes.

The fact is we are here in the 'domain of large numbers'. Valid comparison in this domain can only be made by the method of statistics. This method requires that we must clearly state the way in which we choose our

sample of class numbers. It has provided us with a technique by which each sample can be replaced by certain constants which describe it in definite ways.

51291 STATISTICAL CONSTANTS

Expressed in terms of the number of digits in a class number, the constants are:

- (1) the mode = the most frequently recurring number of digits in the class numbers of the sample
- (2) the median = the number of digits which is not exceeded by a half of the class numbers in the sample
- (3) the mean = the arithmetic mean of the number of digits in a class number of the sample
- (4) the standard deviation = a measure of the scatter of the different class numbers on either side of the class number of average length.
- (5) Co-efficient of variation = $\frac{\text{Standard deviation}}{\text{Mean}} \times 100$

We get a comparison of the length of notation in two schemes of classifications by comparing the values taken by the above constants in the two schemes.

51292 FREQUENCY CURVES

The result is also visualised by their respective frequency-curves. Such a curve is got by

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representing the number of digits along the x -axis and the number of class-numbers (with a specified number of digits) along the y -axis. The data for plotting the frequency curve constitute the frequency table.

By combining the frequency tables of two schemes in a kind of double table, we get the correlation table, which will give us additional information about the correlation between the two sets of frequencies.

We shall use this method to compare the lengths of Colon Numbers and Decimal Numbers. We shall use as sample the first 1,000 translations given in Chapter 52.

51293 NUMBERS OF SAME INTENSION COMPARED

To make a fair comparison, we must only compare Colon and Decimal Numbers worked to equal degrees of intension. We have seen that it is possible to reach a higher degree of intension with Colon Numbers. Chapter 52 shows that in 541 of the first 1,000 translations, the Colon Number reaches a higher degree of intension than the Decimal Number. In these cases, Colon Numbers worked to the same degree of intension as the Decimal ones are given in the third line and these are to be taken for comparison instead of those given in the first lines.

Here is the Correlation Table:

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TABLE NO. 1.
Number of Digits in the Colon Number equivalent to the Decimal Number.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total
Number of Digits in the Decimal Number	1	6																6
	2	35	6	1	4	1												47
	3	2	32	17	17	5	5											78
	4																	0
	5	4	38	38	40	28	27	6	2	2	2	3						188
	6		28	22	41	48	29	14	5	2	2							191
	7		3	20	25	23	18	18	9	4	4		2					129
	8		3	11	8	15	18	11	16	4	1	2		1				90
	9			13	12	7	6	8	10	4	1							61
	10			4	7	9	7	9	8	8	7	2	1					62
	11		2	6			5	4	5		1							32
	12					5	8	9	1	4	4	1						32
	13					3	4	2	2	2	2	3	2		1			21
	14						2	2	1	5	2	3		2		1		17
	15					1		2	1	2	1	3		1	2			13
	16							2	1	2	5	1		2	3	1		12
	17								1	2	1			1				8
	18										1			3	2	2		7
	19												1	1		1	1	3
	20																	1
	21																	0
	22														1			1
	23																	0
	24																	1
Total		47	112	132	156	154	134	85	62	40	27	19	9	9	5	8	1	1000

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Here are the constants:

	<i>Decimal Number</i>	<i>Colon Number</i>
Mode	6	4
Median	6	5
Average	7.366	5.301
Standard Deviation	3.287	2.928
Co-efficient of variation	44.6	55.2
Correlation co-efficient	0.5339	

Judged by the Mode or Median or Mean, the Decimal Number is longer than the Colon Number worked to the same degree of intension.

One should expect a much higher correlation co-efficient, since both the schemes serve the same purpose. But its being only as much as 0.5339 leads one to infer that there is some fundamental difference in the way in which the two schemes approach the problem.

51294 CLOSE FITTING COLON NUMBERS AND DECIMAL NUMBERS COMPARED

Here is the another comparison. In this, the Colon Numbers in the first lines are taken into consideration in all cases. That is to say, Colon Numbers worked to their maximum capacity for intension and the Decimal Numbers worked to their own maximum capacity are compared.

Here is the Correlation Table:

TABLE No. 2.
Number of Digits in the Colon Number worked to its maximum capacity

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
1	5				1																				6
2	31	6	3	1	3	1	1		1																47
3	2	15	12	19	9	8	6	3	4																78
4																									0
5	2	11	23	18	29	18	35	10	17	7	8	3	3	1	2		1								188
6	3	9	21	30	25	33	28	11	13	11	2	2	4	5											191
7	2	5	7	14	17	19	21	14	10	5	6	2	2	3	1		1		1						129
8	1	6	5	6	5	11	21	10	5	5	2	2	2	1	1		8								90
9		8	3	11	8	8	9	5	2	5	4	3	1	2											61
10		2	4	9	4	4	7	6	10	5	5	2	2	3	2		1								62
11	1	1	2		5	3	5	5	2	1	3	1	2	1											32
12					5	7	1	4	6	1	2	2	3	1											32
13					1		2	2	5	2	2	3	2	2	1		1	1							21
14							1	1	2	4	3	4	2	1			2								17
15					1		1	2	1	3	1			1			1								13
16							1	1	2	5	1			1			1								12
17								1	2	5				2			1								8
18									1					1			1								7
19														2			1								3
20														1			1								1
21																									0
22																									1
23																									0
24																									1
Total	40	39	69	80	124	96	121	111	83	64	53	32	29	19	13	2-17	3	1	1	0	1	1	1	1	1,000

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Here are the constants:

	<i>Decimal Number.</i>	<i>Colon Number.</i>
Mode	6	5
Median	6	7
Mean	7·366	7·256
Standard Deviation	3·287	3·678
Co-efficient of variation	44·6	50 69
Correlation co-efficient	0 2043	

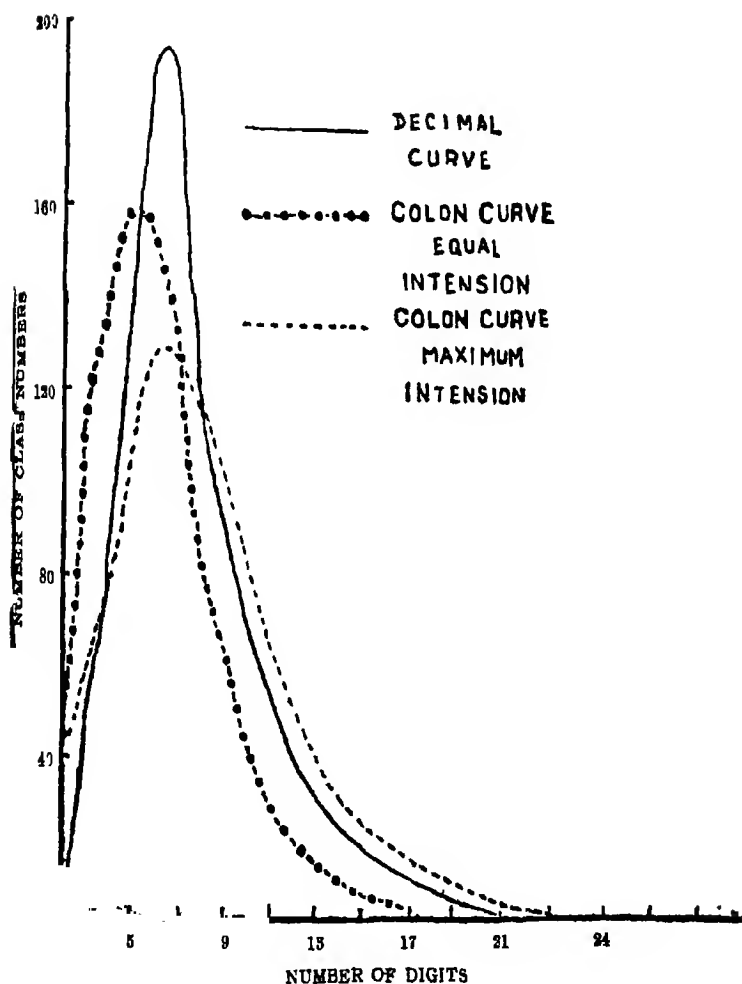
Even when the Colon Number is worked to its maximum degree of intension, which is greater than that of the Decimal Number in more than half of the titles in the sample, the Colon Number is shorter when judged by the mode and mean and is longer by just one digit when judged by the median.

Further the correlation co-efficient has become much smaller. The low value of 0 2043 emphasises the existence of a basic difference in the approach of the two schemes to one and the same task which they are intended to perform. That difference, we know, lies in the extent to which the results of Facet- and Phase-Analysis are implemented in the two schemes. The same difference is also emphasised by the co-efficient of variation, which is 44·6 in the Decimal Classification and over 50 in the Colon Classification.

With our knowledge of books we may state that the distribution of the 'intension' of the

REFLECTIONS AND FUNDAMENTALS

subject-matter of books is more likely to be spread out and graduated as shown by the Colon Curve rather than by the comparative crowding and tapering of the Decimal Curve.



REFLECTIONS AND TRANSLATIONS

In the *Prolegomena to library classification* (Pp. 79—89) a similar comparison has been made. In that case, the sample was different. It was made up of the books (in classes other than Main Class Literature) issued on loan in a single month from the Madras University Library.

513 SOME OBVIOUS IMPROVEMENTS

The translations given in Chapter 52 suggest some obvious improvements in the two schemes of classification treated in this book.

5131 IN COLON CLASSIFICATION

A book describing the organisation of government department is now classified with the aid of the last octave principle. In other words, 'government organisation' is looked upon as a secondary phase of the third species. This species requires a comparatively longer number for representation. We shall gain in brevity if the concept can be transferred to the first species of secondary phase. The Colon Classification should ever be on the look out to make such transfers whenever a concept of the third species begins to attract to itself an appreciable number of books. Now the concept 'government organisation' has begun to do so. The 'Whitehall series' is bringing out volume after volume on this concept. Books on the organisation of the departments of government in other countries also are now coming out regularly.

In fact such books have been made fashionable during the last decade or so, by the fact that Public Administration has now become a subject of study in several centres of learning. Perhaps this movement was initiated by the London School of Economics and by some of the American Universities. It is now spreading everywhere and the result is continuous production of books, periodicals, and articles on the subject. They have now become so numerous that the use of $\Lambda:8:[G]:[C]$ is too cumbersome to reach co-extensiveness in their case. A suitable common subdivision should be invented to manage the situation in a neater way, involving a much shorter notation.

Subjects like 'Sociology' which require as many as five facets need attention. It looks as if the nature of the subject demands so many of them. Nevertheless the flaccidity of some of the class numbers of the subject is an eye-sore. Something should be done to reduce it without any violence whatever to the paramount ideal of co-extensiveness and filiation order.

The time has already come to subdivide some of the common subdivisions. For example 'a Bibliography' should be subdivided so as to distinguish 'Lists of publications', 'Lists of articles, chapters and similar analytical lists' and 'Abstracts'. 'Dictionaries, encyclopaedias' should be subdivided so as to distinguish 'Encyclopaedias' and 'concordances'.

' q Acts, bills, codes ' should be subdivided so as to distinguish these categories.

5132 IN DECIMAL CLASSIFICATION

There are similarly some obvious improvements that can and should be made in the Decimal Classification.

A suitable system of book-numbers, designed in organic relation to class numbers, is necessary so that books may be individualised.

The connecting symbols '0001', '0005', '000' and '00' should be replaced by less cumbersome ones. *r* had been suggested by Dewey himself in the place of say, '0001'. But its ordinal value has not been explicitly defined. Can it be taken to be between '0' and '1'? Phase-Analysis would direct the attention of the editors of the *Decimal classification* to this question.

It must be possible to pull out all the common subdivisions scattered in the Complete Tables and make all classes fall in line with a Common Table of Common Subdivisions. This may not be as simple a task as improving the connecting symbols. And yet it is not beyond possibility and it ought to be taken up in all seriousness.

It should also be possible to fit many of the common subdivisions with geographical and chronological facets or to do something equi-

valent to it, so that libraries with large collections of periodical publications, and similar special forms of writings may be able to individualise them and mechanise their arrangement. The common subdivisions 'Local treatment' and 'History' should be separated.

An imperative necessity is to provide a place among common subdivisions for 'Bibliography', 'Criticism', and 'Memorial volumes'. This also is quite possible and perhaps even easier than the carrying out of the two preceding suggestions.

There are some improvements badly needed but not perhaps possible, without so much change as would destroy the scheme altogether and rebuild it.

One such is the provision to represent all the facets of a subject in its class number. This is necessary, as we have seen in earlier chapters, to make a satisfactory and reasonably close approach to the ideal of co-extensiveness *i.e.* of individualising specific subjects. In 547 out of the 1,008 translations given in Chapter 52, the Decimal Classification fails to reach this ideal. As time goes on *i.e.* as specialised books appear in increasing numbers, the percentage of failure will mount up higher and higher. It is true that the thirteenth and the fourteenth editions have strained every nerve to cope with the situation. But a breaking point has been

reached. Filiatory arrangement is sacrificed and new numbers are improvised only for a fraction of the new cases demanding attention. Subject Device is used more freely. But this is only a poor substitute for the more powerful Facet-Device. An incidental result is the utter sacrifice of mnemonics. The full service of mnemonics is in demand only when the number of classes increases beyond a certain limit. To face its break-down just at such a juncture is a tragedy. All this we are able to see; but we are unable to suggest a remedy. Perhaps, it is not altogether beyond the resources of the Editorial Committee to find a satisfactory method of propping up this giant scheme with some form of Connecting Symbol to implement the Facet Principle fully. In his paper on *Does Colon point a way?* forming part of the Madras Symposium on *Decimal and Colon classifications viewed in perspective* being presented to the Sixth All India Library Conference at Jaipur (1944), Mr. B. I. Palmer suggests that the DECIMAL POINT, which has now no essential function, may itself be used as the Connecting Symbol.

Another improvement which is equally necessary and induces an equally intensive attitude of despair is the grafting into the scheme of some sharp and simple device by which what Bliss has termed the Principle of

Local Variation may be implemented. The **Decimal Classification** is being used in so many lands that it is unfair that it should any longer perpetuate its leanings towards America and its indifference to other lands. Perhaps a small beginning may be made by changing every division entitled 'America' or 'United States' so as to read 'Mother country'. But this will not go a long way. The American bias of the scheme is far too diffuse throughout the scheme to be remedied by this simple device.

The **Decimal Classification** should provide for **Chronological Facets** to be fitted to several classes. This is not quite easy; but it cannot be impossible.

Reference should be made to a small lacuna to be filled up. A place should be given to general books on Christianity.

Sociology should be given a full and independent status. Modern science has been severely ignored even by the fourteenth edition. Is it because its ramifications cannot be met except by pulling down the entire edifice of '5 Pure Science' and rebuilding it on an altogether different basis? **Statistical Methods** must be transferred from '3 Social Sciences' to '5 Pure Science'.

514 FUNDAMENTAL CATEGORIES

We come last to a fundamental point bearing on **Facet-Analysis**. An examination of the

facets of different subjects shows that they can all be related to one or other of five fundamental categories: Time, Space, Energy, Matter and Personality. Any analysis ultimately strikes root in them. A student of advanced classification will, therefore, be helped if he becomes familiar with their existence in the background and gets his ideas clarified in regard to them.

5141 TIME

Let us begin with Time. It is perhaps the most abstract of all the five. The Chronological Facets in the main classes Geography, History, Economics and Sociology and the only Facet of Stratigraphy are instances in which the fundamental category Time figures directly and to represent itself. It does so also in the Chronological Facets of the common sub-divisions Local Treatment and History.

We shall see later (section 51453) that it may also occur to represent the category Personality.

5142 SPACE

Space is perhaps more concrete than Time but not as much as the other categories. This fundamental category figures directly and to represent itself in the following Facets:

- (1) The Space Facet in Geometry
- (2) The Geographical Facets in the main classes Geography, Economics and Sociology

- (3) The differential Geographical Facets following the divisions 'Publications in a particular geographical area' and 'Publications on a geographical area' of the Bibliographical Facet in Bibliography
- (4) The Geographical Facets of certain common sub-divisions like Profession, Statistics, Local Treatment and History.

We shall see later (section 51452) that it may also occur to represent the category Personality.

5143 ENERGY

The category Energy is much more ubiquitous than any other. There is hardly any class which does not have a Facet to correspond with it. The classes Engineering, Agriculture, Medicine, Animal Husbandry, and Sociology have even two Facets to correspond with it.

A Facet in which Energy figures directly and to represent itself is generally called Problem Facet. It is so in Library Science, the several canonical classes of Mathematics, Physics, Geology, Useful Arts, and Philosophy, the main classes Chemistry, Technology, Biology, Botany, Zoology, Medicine, Mysticism, Linguistics, Religion, Psychology, Education, Geography, History, Political Science, Sociology and Law. In Sociology, the second Facet corresponding with energy is called Secondary Problem Facet.

REFLECTIONS AND TRANSLATIONS

In other classes, the Facet corresponding with energy is called by other names: Bibliographical Facet in the class Bibliography.

Work and Secondary Work Facets in Engineering.

Farming, Operation, etc. Facets in Agriculture.

Handling etc. Facets in Medicine.

Veterinary and Handling Facets in Animal Husbandry.

Economic Facet in Economics.

5144 MATTER

We meet with comparatively little of abstraction and a good deal of concreteness in the category Matter. We may recognise different grades of concreteness in describing matter by the terms Matter, Substance and Commodity. In the last mentioned, it is worth recognising two sub-grades: Intermediate Commodity and Ultimate Commodity.

All the visible things in our room belong to the category Matter. The 'Matterness' is common to all of them; it distinguishes them from Time, Space, and forms of Energy like Heat, Light and Electricity. In regard to 'Matterness' all the visible things are alike and undifferentiable. In this undifferentiated, abstract form Matter figures only in the State of Matter Facet of Physics.

We can readily distinguish the different things in the room by the substance of which they are made—say Wood, Iron, the stuff of our own Body, and so on. These are matter differentiated into Substances. They are a more concrete form of matter. Substance Iron for example figures in the window gratings, the paper weight, the iron safe and so on.

In regard to 'Ironness' these are alike and undifferentiable. In this undifferentiated form of substance, matter figures in most of the divisions of the Substance facet of Chemistry.

The differentiated Commodity form—intermediate and some ultimate ones—figure in the Substance facet of Technology. The rest of the Ultimate Commodity forms of matter figure in Useful Arts.

In the Ultimate Commodity which is the most concrete form of Matter, the 'individuating particularities' are so many that it is more appropriate to group it with the category 'Personality', if we can, for want of suitable terminology, force this word to represent not only human personality but everything—Human, Animal, Vegetable or inorganic or other categories like Language and Religion—which have an individuality and aroma of their own.

5145 PERSONALITY

The fifth fundamental category Personality, which has to be used in a very generalised sense

as stated above, is unanalysable. We have to treat it gently and as a whole. It may have to be represented directly by special numbers as all other categories or in some cases it may have to be represented indirectly by the other fundamental categories used singly or in combination. In the latter case the Facets in which it figures may be called by the name of the categories used to represent it. In other cases, the names of the Facets may be more appropriate or directly descriptive of it. Let us illustrate.

51451 FIGURING DIRECTLY

In the Educand Facet of Education and the Entity Facet of Psychology, the names of the facets use terms suggestive of human personality.

In the Group Facet of Sociology, the name of the facet uses a term suggestive of Social Personality.

In the Organ Facet of Medicine the name of the facet uses a term suggestive of the physical aspect of human personality.

In the Natural Group Facets of Botany and Zoology and the Crop and Animal Facets of Agriculture and Animal Husbandry, the names of the facets use terms suggestive of the physical aspect of the personality of living organisms, other than man.

The Language Facet of Linguistics is concerned with the subtler personality of Lan-

guage. So it is with the Religion Facet of the main class Religion.

In all the above cases, the foci in the facets are enumerated *ad hoc*. We shall now give examples of the foci of personality facets being the same as those enumerated in facets of other categories.

51452 FIGURING THROUGH SPACE

In History, the Personality of the national group studied is individualised, not by special or *ad hoc* numbers, but by Geographical Numbers, with the result that the Facet itself is called Geographical Facet. It must be remembered, however, that the category Space figures in this Facet not to represent itself but to represent one form of the category Personality. We may also say that Personality figures in this facet indirectly through the category Space. It figures in a similar indirect way in most of the divisions of the Community Facet of Law.

51453 FIGURING THROUGH TIME

The category Personality figures indirectly through the category Time in the Chronological Facet of the common subdivision *w*.

51454 FIGURING THROUGH SPACE AND TIME

The category Personality needs the joint services of Time and Space to get individualised in certain cases. When the Personality is that of an Institution, a Conference or a Commission,

it figures indirectly through the combined categories of Space and Time in the Geographical and Chronological Facets of the common subdivisions *h*, *p* and *t*.

The subtler form of Personality called style in Fine Arts similarly figures indirectly in the Geographical and the Chronological Facets of that subject.

51455 FURTHEST REACH OF CONCRETENESS

Lastly we come to the main class Literature. Here the highly evolved, fully differentiated, unique Personality of an author figures indirectly through the combined categories of Personality of another kind, Energy and Time represented in the Language, Form and Chronological Facets respectively. The even subtler Personality of a literary piece needs the services of all these three and to their combination, another Facet called work facet with *ad hoc* foci, has to be added to get it fully expressed. We get the furthest reach of concreteness here.

5146 ORDER OF ARRANGEMENT OF CATEGORIES

Several of these five fundamental categories may figure with facets of their own in many classes. The question of the order in which the facets are best arranged is a delicate one. The Colon and the Decimal Classifications often arrange them in the same order. Occasionally, they differ as in regard to Style in Fine Arts

and to Legislature, Executive, etc., of different countries. It would be a good exercise for the more ambitious students to list the cases in which they agree and those in which they differ and discover the fundamental principles, if any, which lie behind their respective practices. Such an exercise will give them practice in recognising different degrees of concreteness and abstraction. Though experience thus gained will not be quite necessary for elementary classification it will be of help in advanced work both as classifier in dealing with multiphased and many-faceted specific subjects and as classificationist in meeting fundamental difficulties that may be mobilised against him by the *new subjects that get created from time to time.*

515 SCOPE FOR RESEARCH

We may conclude with a picture of the scope for growth and, therefore, for research at different levels in the design and progressive perfection of the classificatory language. The decision to be made in translating the name of a specific subject into class number has to be made at three levels. We shall describe them by an analogy.

A traveller has to decide the extent to which his journey should be performed on land, water and air; and in any of these, the variety of vehicles to be commandeered; and lastly the particular vehicle to be chosen of each variety—

REFLECTIONS AND TRANSLATIONS

on land, for example, how much should be done by foot; how much on backs of animals and on which animal; how much by cars and by which car; and how much by railway and by which train. This corresponds with decision about the phases warranted by the specific subject, the facets in each phase and the foci in each facet—with regard to facets, for example, which of them should be deemed unifocal, and what foci should be fixed upon; which should be deemed vacant and which left out altogether, in order to cover the extent of the specific subject fully; organically and economically.

The design of classification should be such that there is scope for classifiers of ability to improvise at least new foci or to sharpen some to meet new situations; the apparatus provided for it should lead to one and only one solution whoever handles it. Such a quality is necessary in a scheme of classification for two reasons: one, the practical one that the work of a library should not be held up by the necessity to look to the designer of the scheme at this level, for his prescription of all the foci; second, the human reason that classification should not degenerate into a purely repetitive boredom but should provide scope for the exercise and fulfilment of the creative urge in man. In other words, the classifiers should be given opportunity to function also as classificationists in little.

Let us now examine what scope there is for the fulfilment of this human purpose at the three different levels of classification mentioned above.

516 AT THE LEVEL OF PHASES

First let us examine the level of Phase-Analysis. In aerial navigation, there is scope to rise to higher and higher strata—to the stratosphere and the still higher ones right up to the ionosphere perhaps. To venture into these ethereal regions, to chart them, and to design vehicles suited to them, is work of an extremely arduous and specialised nature. Surely pedestrians and even most of the navigators on land and water can not aspire to succeed in that work. At the level of Phase-Analysis, the isolation of further species of phases, their definition, and the design of organic connecting symbols, will probably remain for ever as the work of the exceptional few who are born artists in classification. But the occasion to recognise and provide for new species of phases will be correspondingly few and far between; that is in accordance with the perfect economy that prevails in cosmic order. Dewey began practically with only one phase properly developed; Cutter and Brown recognised and provided for two; The Colon Classification isolated three and fitted them up in a most organic and economical way. This book has just envisaged the possibility of

two more species being isolated at some future time. That is all that has happened by way of a new creation during the last three-quarters of a century at the rarefied atmosphere that prevails at the level of Phase-Analysis.

517 AT THE LEVEL OF FACETS

At the level of Facet-Analysis which is slightly nearer normal, problems will arise somewhat more frequently. Several subjects and common subdivisions, of the past, present and future, will have to be fitted with facets as growth of literature demands. This is also a specialist's job, though not as exacting as that of designing new phases. One who is well-tuned with the concept of the five fundamentals—time, space, energy, matter and personality—and has acquired deftness in sensing their relative incidence and potency in new subjects and in handling the colon notation, may succeed at this level. But they will be few in number and the occasion for creative work also will be but in proportion—cosmic economy again. Work at this level is so fundamental that it would be wise to have the designs made by different persons brought up for collective consideration and to make the final choice by agreement. The number of alternative designs possible in an organically created scheme will not however be too many and, therefore, the chances for the right one to be lit upon by any will be great.

518 AT THE LEVEL OF FOCI

At the level of foci, occasions for recognising and numbering new foci in arrays of high order, say higher than two or three, will be quite frequent; and that for sharpening existing ones, *i.e.*, for recognising new foci in chains and deriving their numbers by the addition of extra digits to existing numbers will be even more frequent. In proportion to their high frequency, this job can be done quite accurately and in the only right way by many, many classifiers who have well absorbed the use of the apparatus available—octave principle, chronological, geographical, subject, classic and alphabetic devices and the decimal notation, and have also become attuned to the canon of mnemonics—particularly in regard to the intangible and therefore more potent ones of the unscheduled variety. Further, any deviation from the right decision is far less harmful and far more easily rectified at the level of foci when the right placing is shown by others or by the original designer himself. Also the probability for deviation and the need for re-doing will be quite small.

EXERCISE

- A. Fit up facets for the Canonical class 'MV4 Military Science'.
- B. Determine the important foci in each of the facets.

REFLECTIONS AND TRANSLATIONS

- C. Translate into Colon Numbers the chief classes newly opened in the 14th edn. of *Decimal classification* for 'World War 1939', and comment on them and on their Decimal Numbers.

519 A LOOK INTO THE FUTURE

The folklore of India still treasures an exquisite anecdote that the erection of the highway (Adams Bridge) bridging the gulf between Ceylon and India provided opportunity even for tiny squirrels to make their own tiny contributions and that Nala the master-builder accepted them all with unabated enthusiasm and, what is more, found use for one and all of them. The building of the highway of classificatory language to facilitate communication between the world of readers and that of books can similarly accept contributions from all classifiers.

As we look into the future, we are heartened by the sight of the never-ending vista of progress providing opportunity for creative work to classifiers at all levels of ability—to each in the measure of his native endowment—provided industry, sincerity, and love of the profession born out of love of humanity are possessed in abundance.

CHAPTER 52

TRANSLATIONS

The Colon and the Decimal Numbers of all the 1,008 examples and exercises given in parts 2-4 are given here. In those in which the Colon Number reaches a greater degree of intension and the Decimal Number is not capable of doing so, the Colon Number worked to the same degree of intension as the Decimal Number is given in the third line.

Note that India has been taken as the 'Mother country', Great Britain as the 'Favoured country', and English as the 'Favoured language'.

Note also that the following title was inadvertently omitted in the exercises.

338 BURN (Arthur), etc. Turbine machines and heat engines.

1	B	10	P
	51		4
2	C	11	R
	53		1
3	D	12	S
	62		15
4	G	13	T
	57		37
5	H	14	W
	55		32
6	I	15	X
	58		33
7	J	16	Aem73:N30
	63		051
8	K		573
	59	17	B396M59
9	L		517.37
	61		B396

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18	C53:3 537.53 C53	33	V13:19:N3 327 V:19
19	D646:415 621.4384 D646:41	34	W:7 321
20	F195v2:N3 671.0954 F195v2	35	XN12:76:55:N3 380.166 XN12
21	G11:3 574.876	36	Y172:5.2:73:N3 325.26 U425:6
22	H7D14u731 553.520974	37	Z1:A173qN3 341.3 Z1:A
23	I:5:1955 581.5263233	38	N22:C.9Q 732.834 N22:C
24	J981:7:97 633.85 J9	39	Δ :8:P111:4k 159.96103 Δ :8k
25	L:573:E3097 612.392 L:573	40	B 51
26	O152:1J32:1 891.481 O152:1	41	B3 517
27	P28:180P12 492.7111 P28:18	42	C 53
28	Q8413:216 299.51 Q841	43	C3 534
29	R66:6x1:9 181.4 R6	44	D66:1135u7361 621.31213409753
30	S8:44 301.15 S8	45	E2 541.3
31	T4b5673:N3 371.170973 Tb5673	46	F9496 668.1.
32	U8:Z:155 323.67	47	G:19 578
		48	H 55
		49	H4132 551.21
		50	I 58

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51	I22:12:71	68	T195y7
	589.3		371.98092
	I22	69	U28
52	J		551.5
	63	70	V467:1:N3
53	J37:77:84		956.7
	664.8		V467:1
	J3::84	71	W
54	G		22
	57	72	W:72
55	Gv1:N3		321.3
	570.9	73	X
	Gv		33
56	L:573:94	74	X61:7:1:N3
	618.2		333.409
	L:573		X61::1
57	MK711:3·3:94	75	Y1
	638.2		301
	MK711	76	Y111:4:5Zam594:N88
58	N821:K:2		016.862705
	780.9548		Y111:4:5Zam
	N821	77	Z1
59	O:2J64:51:9		241
	822.330188	78	Z2:94
	O:2J64:9		349.540794
60	P	79	E33:5
	4		543.8
61	P15703	80	F191:95
	491.447		669
62	Q6:83		F191
	232.9	81	P111:J1:J1
63	R		421.5
	1		P111:1
64	R3:Q	82	Q6:3
	201		23
65	S	83	S13:5
	15		159.92273632
66	S15:7	84	U5:5:N3
	159.925		911.4
	S:7		U5:5
67	T		
	37		

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85	V5925:19:N3 327.437 V5925:19	101	U6:3:N3 380.952 U6:3
86	X9J771:51:2:N2 333.173510954 X9J771::2	102	U8:65:14 916.6 U8:65
87	Q42:35 294.32 Q42	103	V3:22:N3 354.4205 V3:22
88	E390151 545000154618	104	V41:1:N3 951 V41:1
89	E7:96 612.3978	105	X411:8:1:N3 388.1 X411
90	P111·D28:32 429.56 P111:D2:32	106	X9J:51:25:N3 338.140954 X9J:51:2
91	Q11:31 294.1 Q1	107	X9M71:952:3163:N3 331.286772094272 X9M71:952:3163
92	Q2:427 294.5 Q2	108	X9MV4:75:1:N3 338.9276234 X9MV4:75
93	Q7:26 297 Q7	109	E7:993 612.39723
94	Q7:4 297 Q7	110	O122:3M02:4 843.78 O122:3M02
95	Q7:366 297 Q7	111	Q4:33 294.3 Q4
96	S1:811 159.92272633	112	V3:1:L6 942.072
97	S15:31 159.92272542	113	V72:1:N3 971.05
98	S15:44 159.922725	114	X9F42171:531:2:N3 337.566140954 X9F4:531:2
99	S2:55 159.9227364 S2	115	E7:97 574.194
100	S2:7 159.9223 S:7		

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116	E7:981	131	Q132:22
	581.13242		294.1
117	E7:982		Q1
	612.0151	132	Q22:223
118	O115:3M82:44		294.5
	839.823		Q2
	O115:3	133	Q25:225
119	O121:1G65:1		294.551
	851.15		Q25
	O121:1G65	134	Q41:22512
120	O122:3L99:18		294.31
	843.73		Q41
	O122:3L99	135	Q41:22591
121	O142:2M78:11		294.31
	891.72		Q41
	O142:2	136	Q52:222
122	O15:1D40:8		296
	891.21		Q5
	O15:1	137	Q7:21
123	O15:2D40:1		297
	891.22		Q7
	O15:2	138	Q6:33
124	O15:2D70:2		232.9
	891.22	139	Q8412:33
	O15:2		299.51
125	O15:3D63:1		Q841
	891.23	140	U8:2:N3
	O15:3		910.54
126	O164:1E50:1		U8:2
	891.511	141	U8:45:N0
	O164:1		915.5
127	O28:3D95		U8:45
	892.73	142	V3:1:M7
	O28:3		942.08
128	O31:1M81:11	143	V31:1:K0
	894.8111		942.055
	O31:1	144	V465:1:N3
129	Q6:23		956.9
	225		V465:1
130	Q127:22	145	X9D66:731:7361:N3
	294.1		338.47621809753
	Q1		X9D66::7361

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146	X9J:6.2:N3 338.130954 X9J:6:2	161	E1.4121501 549.72 E1:450
147	X9M13:53:2:N3 337.56760954 X9M13:53:2	162	E3.4262616 549.75 E3:461
148	L35:411 616.15 L35:4	163	E1:1 546
149	L37:411 616.13 L37:4	164	E33:1 543.7 E3:1
150	L37.4711 616.13 L37:4	165	F118:M87 669.2 F118
151	L396:412 616.42 L396	166	P111:J3 425.2 P111:3
152	L44:453 616.23 L44:4	167	P111:J1:6 421.5 P111:1
153	L4511:415 616.25 L4511:4	168	P111:J1:76 426.1 P111:1:76
154	L4511:485 616.25 L4511:4	169	P111:J13:11 421.2 P111::11
155	L291:453 616.36 L29:4	170	Q2:31 294.5 Q2
156	L293:46 616.63 L25:451	171	Q2:315 294.5 Q2
157	L25:451 616.34 L25:45	172	Q6:31 231.1
158	L55:3 618.2	173	Q6:35 234
159	L55:4 618.1	174	Q22:417 294.5 Q2
160	E1:210 546.11	175	S13:44 159.92247255

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176	U641:1 387.52 U641	192	X9J 712.1.N3 338.15 X9J:74
177	U6:1:N2 380.9 U6	193	X:75 338.54
178	V2:1:N1 954 V2:1	194	X:75:58:N3 338.947084
179	V233:1:J9 954.7 V23:1	195	X:8 658
180	V45:1:N1 955 V45:1	196	X9J:8 658.93
181	V5:1:K5 94 V5:1	197	X9J 338.1
182	V4363:1:M1 992.2 V4363:1	198	X9J::63:N3 338.10968
183	V467:1:N3 956.7 V467:1	199	X9J::63 X:9 331
184	X:9 331	200	X:944 331.822
185	X9J:8:63:N3 338.10968 X9J::63	201	X9MF5895:944 331.828676
186	X9J771:75:73:N3 338.9213510973 X9J771:75:73	202	U:1 91 U
187	W 33	203	U:71 917
188	W:5 333.4	204	U:233 915.47 U:23
189	W6 321.4	205	U2 551
190	X 33	206	U2562:91 551.477
191	X:74 338.54	207	S 15
		208	S:74 159.92832
		209	S1:74 159.92832 S:74

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210	S1	227	P1511::301
	159.9227		491.370151
211	Q		P1511:2
	291	228	P197::9
212	Q:1		491.9987
	291.13		P19::9
213	Q:33	229	P164:J:9
	291.64		491.5587
214	Q1	230	P446191
	294.1		495.99
215	Q11		P4
	294.1	231	P615
216	P111:D		496.3
	429	232	Δ 1:3
217	P111:E		149.3
	427.02	233	Δ :7:11
218	P111:J1		211
	421.5	234	Δ 73
	P111:1		181.5
219	P142:J	235	F:8
	491.7		541.39
	P142	236	F58
220	P13:C:9		667.2
	488.6	237	FM95
	P13::9		771
221	P15:A	238	E2
	491.1		541.3
	P15	239	E213
222	P15:A:5		541.39
	491.31	240	E2131
	P15::5		541.39
223	P15:10A1		E213
	491.15	241	W
	P15:1		32
224	P15:C3	242	W:3
	491.152		32
	P15:3		W
225	P151	243	W:5
	491.3		323.4
226	P1516::9	244	W:5
	491.386		323.44
	P15::9		

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245	W6	263	X9J::25222:N3
	321.4		338.1094
246	W64		X9J::2
	321.6	264	X9J::572:N3
247	X:73		338.109489
	338.52		X9J::572
248	X:329	265	X9M6::2:N3
	331.214		338.4766610954
249	X:3M24		X9M6::2
	334	266	X9M6::73:N2
250	X:3N20		338.4766610793
	339.25		X9M6::73
251	X:51	267	X9M7::2:N3
	658.8		338.476770954
252	X:575		X9M7::2
	330.151	268	X9M71::41:N3
253	X:75		338.4767720951
	338.91		X9M71::41
254	X:75:1:N3	269	X9M71::42:N3
	338.9109		338.476772952
	X:75:1		X9M71::42
255	X:871	270	X9M97::262:N2
	658.154		338.4767509541
256	X:873		X9M97::26
	657	271	X9M97883::7355:N2
	X:87		338.47685309744
257	X:9		X9M97883::7355
	331	272	X9MK3::937:N3
258	X:9:1:N3		338.17609931
	331		X9MK3::937
	X:9	273	X9N915::2:N3
259	X:9:2:N3		338.4777850954
	331.0954		X9N915::2
	X:9:2	274	U:1
260	X:9:431:N3		91
	331.09597		U
	X:9:431	275	U:5
261	X9J		914
	338.1	276	S9
262	X9J::262:N3		159.922
	338.109541	277	S13:44
	X9J::26		159.92272556

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278	S18	295	P15:C:9
	159.9227		491.287
279	S2		P15::9
	159.9227364	296	P15:C:9
280	S62		491.287
	159.922762		P15::9
281	S75	297	P15:C14
	159.922494		491.218
282	Q		P15:14
	2	298	P1511::9
283	Q:1		491.870187
	291.13	299	P1516::9
284	Q1		491.2786
	294.1		P151::9
285	Q3	300	P165
	294.4		491.58
286	Q6	301	P168
	23		491.43
287	P111:J	302	P32:2
	42		494.8125
	P111	303	P36::9
288	P111:J3		494.82486
	425.2	304	Δ
289	P122:H		149.3
	44	305	Δ
	P122		149.3
290	P122:H1	306	Δ :7:2
	441.5		291.212
	P122:1	307	Δ :8:16
291	P13:C		159.9617
	48	308	Δ :862
292	P15:0A:9		159.9257
	491.186	309	Δ :87
	P15::9		159.96143
293	P15:C	310	Δ 2:34
	491.2		612.2
	P16	311	Δ 46:3
294	P15:C		294.32
	491.2		Δ 46
	P15	312	Δ 5:3
			296
			Δ 5

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313	△6	332	G:346:94
	233.3		612.3919
314	F594	333	G61:33:94
	663.1		612.45
315	F:6		G61:3
	541.3700016	334	G:5:19518
316	F:98		575.326324
	658.5671	335	G:5:19518-7343'
317	E28		575.326324
	541.6		G:5:19518
318	E39	336	G:56:73PK1
	544.8		575.35
319	D3551		G:56
	622.33	337	I22:12:5
320	D3551:25		589.3
	622.335		I22
	D3551	338	I22:12:8
321	D3118:28		589.3
	622.3421		I22
	D3118	339	I22:14:3
322	D6:5		589.3084
	628.9		I22:14
323	D6:9M14	340	I 331:68
	655.2		581.13352
324	D66:5	341	I21.332:182
	621.32		581.133545
325	D64:121		I:332:182
	621.194	342	I5:331:68:178
326	D64:121::81		581.13352
	621.1947		I:331:68
327	D64:415	343	I-5:1911-677
	621.13		581.52653
328	D646:415		I:5:1911
	621.4382	344	I:5:1911-71
329	D66:415		581.52653
	621.33		I:5:1911
330	D664:3	345	I:5:1911:281
	621.3143		581.52653
331	G:33:161		I:5:1911
	574.13	346	I:2:12
	G:33		581.8

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347	I:4:11 581.26	362	J374:7:97 634.772 J374
348	I5:7:178 581.327 I::178	363	J374 634.772
349	J:1:1911 631.44	364	L:33:182 612.01531
350	J:4I21 632.3	365	L:4:6426 615.854 L:4:642
351	J3:4I21 632.3 J:4I21	366	L65:47:4 617.44 L65:47
352	J321:4I21 632.3 J:4I21	367	L9172:4241:2 616.854 L72:4241
353	J321:4I21:2 632.3 J:4I21	368	L:52:MK33073 614.317
354	J321:4I21:55 632.3 J:4I21	369	L:573:J33T1 613.26 L:573:J
355	J:7:84 631.563 J:7:8	370	L:63:118 615.291
356	J37:77:84 634 J37	371	L2:63:411616 615.732 L2:63
357	J374:77:84 634.772 J374	372	L:68:41811612 615.4000191 L:68:418
358	J374:77:2 634.772 J374	373	T:3:B1 375.511D
359	J374:77:25 634.772 J374	374	T:44:B1 375.511C
360	J374:77:3 634.772 J374	375	T15:3:B1 372.7
361	J374:77:97 634.772 J374	376	T15:472:B1 371.260001511
		377	T2:3:B2 375.512D T:2:B2

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378	T4:4751:D 371.27000162 T:475:D	396	D666:::78 621.38417127
379	D3145 622.345	397	D666:3 621.384152
380	D3551:28 622.335 D3551	398	D666:45 621.388
381	D3D14 622.35	399	D666:485 621.384193
382	D6:5 628.9	400	G:33:68 612.396
383	D6:8 621.75	401	G:33:94 612.397
384	D6:825 621.91	402	G2:346:68 612.3914 G:341
385	D6:9D85 621.61	403	G82:33:151 612.39 G:33
386	D635:6 621.26	404	G:33C5 621.52
387	D64:::81 621.1947	405	G18517:33:160 612.39 G:33
388	D64:9M7 677.0285 D6:9M7	406	G:5:1951 575.326324
389	D641:2 621.185	407	G:5:19518-572 575.326325 G:5:19518
390	D646:4133 621.4384	108	G:5:196-495DT9 575.326533 G:5:196
391	D6467::7 621.42 D6467	409	I23:18:2 589.235 I23
392	D66:1135 621.312134	410	I231:12:2 589.23 I231
393	D66:126 621.315	411	I237:14:3 589.222084 I237:14
394	D66:5 621.32		
395	D664:2 621.31913		

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412	I32:12:5	428	J:1
	588.2		631.4
	I32	429	J:31:18:231
413	I32:2		631.521209547
	588.2	430	J:4:6
	I32		632.95
414	I5:12:2	431	J:4I23:918:298
	581.954		632.4
415	I5:12:2137		J:4I23
	581.9548	432	J:4I5:2
	I5:12:21		632.58
416	I5:2:16		J:4I5
	581.4632	433	J:4K86:68
	I:2:16		632.7
417	I5:2:11		J:4K86
	581.87	434	J:7:22y8
	I:2:11		631.56072
418	I:5:196:13		J:7:2y8
	581.524444	435	J2:7:8
	I:5:196		631.563
419	I:5:196:15-875		J:7:8
	581.524444	436	J2:913:21
	I:5:196		633.2
420	I:5:193		J2
	581.526522	437	J326:4I23:2
421	I8141:5:196-74		632.4
	583.152		J:4I23
	I8141	438	J37
422	I:5:18:13y7		634
	581.524443092	439	J376
	I:5:18y7		634.8
423	I:56:73729	440	J376:44:4
	581.524309783		634.82
	I:56:7372		J376:4
424	I:3:875	441	J376:71:84
	581.8743		634.873
425	I:7:13		J376:7:8
	581.135298	442	J982:4K81
426	I:71		634.61
	581.16		J:4K86
427	J		
	63		

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443	J982:78:4	458	K9:17
	632		579
	J:4		G:17
444	K	459	L:3:1830K
	59		612.85000159
445	K:12:1912-9414	460	K9:7:82
	591.52		596
	K:571		K9
446	K:19	461	K9797:66
	578		599.9
447	K:331:94		K9797
	612.3974	462	L
448	K96:33:175:35		61
	598.2	463	L:14
	K96		613.56
449	K:5	464	L:17
	591.5		615.781
450	K86:5:195	465	L:4
	593.7		616
	K86	466	L:4:1
451	K8772:565:5812		610.73
	591.52	467	L:4:31
	K:565		616.075
452	K94:5567:1911	468	L515:E3y8
	598.1		612.461072
	K94	469	L:4:55
453	K96:5:48RA8		612.118222
	598.2	470	L:4:6
	K96		615.5
454	K96:5:1914	471	L:4:6251
	598.2		614.84
	K96		L:4:625
455	K43:12:911	472	L:4:7
	593.72		617
	K43	473	L:4:97
456	K653:12:222		614.8
	595.16	474	L:42:2
	K653		616.01
457	K86:76	475	L:427:2
	591.34		595.1000161

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476	L:435:2 616.969 L:435	492	L912:45 618.92 L91
477	L:63:54 615.964	493	L91291:4711 618.92 L91
478	L:63:J 615.32	494	L:78 618.97
479	L39:3 612.42	495	L98 616
480	L39:481 616.14 L39:4	496	T15:44:Q 375.2A
481	L396:4241 616.923	497	T15:44:V 375.9A T:44:V
482	L396:4241:52 616.923 L396:4241	498	T15:47:P 371.26 T15:47
483	L396:4241:66 616.923 L396:4241	499	T15:472:B2 371.260001512
484	L91:4 618.92	500	T15:472:U 371.26000191 T:472:U
185	L91:4:1 610.73 L:4:1	501	T2:44:B 375.51C T:44:B
186	L91:4:3 618.92 L91:4	502	T2:44:B 375.51C T:44:B
487	L91:4:7 618.92 L91:4	503	T2:44:Y 375.3A T:44:Y
488	L91:47 618.92 L91:4	504	T2:472:E 371.26000154 T:472:E
489	L91:54 618.92 L91	505	T2:472:V 371.2600019 T:472:V
490	L91:573 618.22	506	T4:44:I 375.58A T:44:I
491	L91:75 612.65		

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507	T4:4751:V 371.2600019 T:475:V	524	Z:21:3 349.072 Z:21
508	T:3:M3 375.64D	525	Z1:3:37 341.2 Z1:3
509	T:3:P 375.4D	526	Z1:928 341 Z1
510	T:3:P:1:6 372.4	527	Z1:A173 341.3 Z1:A
511	T:3:P1 375.4D T:3:P	528	Z2:2:46 349.54072 Z2:2
512	T:3:P5 375.4D T:3:P	529	Z3:21:3 347.2 Z3:21
513	T:3.Y 375.3D	530	Z3:6 341.5 Z:6
514	T15:3:G 372.857	531	Z55:175:1 349.48071 Z55:1:1
515	T15:3:O3 372.214	532	Z73:211:3 347.2 Z73:211
516	T15:3:P:1:6 372.4	533	ZQ2 349.54 Z2
517	T15:3:V 372.89	534	ZQ2:2:41 349.54076 Z2:2:41
518	T2:3:P1 375.4D T:3:P	535	ZQ2:926 349.5401 Z2:92
519	T2:3:U 375.91D T:3:U	536	ZQ3 349.54 Z2
520	T4:3:A 375.5D T:3:A	537	ZQ711:35 349.53074 ZQ7:3
521	T67:3:P 371.912 T67		
522	T673:3:P:1 371.927 T673		
523	Z:12294:1 349.076 Z:12		

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528	1	555	MK2:912:2
	01		636.28
529	12.315:3:L57		MK2:912
	016.0910004912	556	N5
	12:315		75
540	B2	557	N52:J
	512		759.954
541	B235:5		N52
	512.82	558	N52:J3:Q2:3
	B23:5		759.954
542	B283		N52
	311.26	559	R216
543	C5		121
	525		R2
544	C53:58	560	R2:A
	537.53		113
	C53	561	R325
545	C427		149.2
	536.52	562	R39Y:Q
546	H1		201
	549		R3:Q
547	H191:16	563	R4:Q
	549.2		171.1
	H11	564	R4:Q6
548	H4132		171.1
	551.2		R4:Q
549	H7:16	565	Y1
	622.12		201
	T:44:Q	566	Y1:5
550	H7182:16		312
	622.12	567	Y173P1
	H7:16		572.891
551	H7210	568	Y173P1:3MK442
	553.7		572.891
552	M3		Y173P1
	64	569	Y173P1:1:6
553	MK		572.891
	636		Y173P1
554	MK31:71:3	570	Y115:88:6:1:N2
554	MK81:71:3		391.2
			Y115:88

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571	14.1231:M6	587	B131:2:3
	015.547		512.81
	14:1231		B13
572	14:13:J5	588	B3
	015.43		517
	14:13	589	B316
573	14:13:M6		513.83
	015.43	590	B36M22
	14:13		514.2
574	14:23:N1	591	B38:22
	015.43		517.8
	14:23		B38
575	14:31287:N2	592	B399N23
	016.49163		517
	14:31287		B3
576	14:315:M9	593	B463
	016.4912		517
	14:315		B3
577	14:328:N2	594	B62:2
	016.4927		516.22
	14:328	595	B633:4
578	14:421:M57		516.46
	017.1		B633
	14:4	596	B7:3
579	14:43:L57		531.2
	017.1	597	B71:2
	14:4		531.3
580	14:7	598	B75:2
	015.0287		532.5
581	14:91	599	B85
	028.5		530.1
582	2	600	B93:523
	02		522.91
583	251		B9:522
	025.4	601	B93:57
584	255		523.78
	025.3	602	B93:631
585	24		523.73
	025	603	B96:6358
586	2:31		523.86
	027.82		B96:6

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604	C2	621	H8
	539		550.1
605	C216:8	622	M7:4
	539.2		667.2
606	C25:62	623	M71:3
	541.321		677.2162
607	C2866:1		M7:3
	621.38413218	624	MC5
608	C35		535.8
	534.1	625	MD53
609	C56:3		387.7
	535.6	626	MK:1
	C5:3		636.085
610	C5:38N28	627	MK31:911
	535.4		636.224
	C5:3		MK31
611	C6:44	628	MK31:7
	537.1		637
	C6	629	MK351:4
612	C82N28		636.5
	530.1		MK351
	C8	630	N1
613	H235401:16		72
	553.21	631	N2
	H235401		73
614	H36	632	N3
	551.43		76
615	H69	633	N82
	566		780.954
616	H697	634	N85:1
	569		781.91
617	H7:15		N8:1
	622.12	635	N912
618	H7113:15		792
	553.43		N91
	H7113	636	N915
619	H7431411:15		791.4
	553.9	637	R2
	H7		121
620	H7555:15	638	R3:C8
	553.28		113
	H7555		

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639	R3:Q7	654	Y172:2::73:N4
	297		573.60978
	Q7		Y1:2::78
640	R39Y:	655	JA
	201		634.9
	R3:Q	656	JA:41:5
641	Y1		634.961115
	301		JA:41
642	Y1:1	657	JA:74:912:2
	301		634.927309548
	Y1	658	LA:44:6
643	Y1:433:6:3:N3		615.89
	364.430942		L:4:6
644	Y1:45:61:73:N3	659	LB91:4
	351.740973		615.89
	Y1:45:61:73		L91
	Y1:45:5:73	660	LL41:4241:6
645	Y1:795::233:N3		615.53
	573.409548		LL
	Y1:795::23	661	SM95:815
646	Y1:45:6T:3:N3		159.964
	364.70952		SM95
	Y1:45:6T:3	662	SM951
647	Y131:1:7:438:N3		159.964
	630.1		SM95
	Y131	663	SN13
648	Y141:433:5T:1:N3		159.901943
	364.4309	664	SN138
	Y1:43:5:1		159.901943
649	Y15:1:6		SN13
	312.9	665	XM25
650	Y17:1:12:236.N1		234
	572.9545	666	XM25::2:N3
	Y17:12:236		334.0954
651	Y17:1:6		XM25::2
	572.2	667	XM25:51
652	Y172:1:12:7:N3		380.125
	572.97	668	XM259J
	Y17:1:12:7		334.683
653	Y17:1:1:435:N2	669	XM259J:51:73:N3
	572.9595		338.140973
	Y17:1:1:435		X9J:51:73

REFLECTIONS AND TRANSLATIONS

670	JA:15 634.94727 JA:1	687	XM2562 334.2
671	JA:4 634.96	688	XM259D1 334.1
672	JA:4K86 634.9667	689	XM259J:6:41:N3 334.230951 XM259J:6:41
673	JA:7:97 634.98	690	XM259J771:51:73:N2 334.683510973 XM259J771:51:73
674	JA:4:5 634.96 JA:4	691	XM55:8:3:N3 347.7 X:5:23
675	JAT3:74:9153 634.9285463881	692	XN12:6:73:N3 380.1660973 XN12::73
676	LA:65 615.89 LA	693	XN129D85:8:3:N2 380.166000162810942 XN129D85:8:3
677	LB 615.89	694	Z3k 346.03
678	LC:6 615.89	695	D666:485m3:N11 621.38405 D666:485m
679	LL:66 615.53 LL	696	Y1.44n1:3:N34 176.5059 Y1.44n
680	LL87:4:6 615.53 LL	697	T4p1:3:N12 378.063 T4p
681	LM 615.853	698	JA:74s 634.98200031
682	SM62 159.9072	699	T9Y131s73:N3 379.17300031 T9Y131s
683	SM95:72 159.9642 SM95	700	GwM25 570.92 Gw
684	SN145 159.964263 SN14	701	OL13:2L49x 832.62081
685	XM25::2-2:N3 334.0954 XM25::2		
686	XM25:2 334.6		

TRANSLATIONS

702	O15.2x D8 891 220822 O15.2x	718	La4 473 M36 O16.61 La
703	BxM87 510.81 Bx	719	CyM31 53 C
704	Sy8 150.72	720	O.3M40:9 823.89 O:3M
705	Tz7 370.4	721	BwM8 510.92 Bw
706	Xz7 658.04	722	Sw1:N3 150.9 Sw
707	O:1:9L9 821.0188 O:1:9	723	H67753u71:531 564.53097 H67753u71
708	C5.9 535.013	724	JAu438:M7 634.909591 JAu438
709	B325e 517.30825	725	O:zM9 820 823 O.z
710	U:1f 912 Uf	726	T15.3:P5y7 371.98 T15:3:P5
711	Dq2 620.0037 Dq	727	O 3M74:9 823.91 O:3M
712	Uc 910.72	728	R65.0:9 181.4 R6
713	Tb11.7312:N3 370.69 Tb	729	Q6:2361:9 227 Q6:236
714	Tr433 370.0039 Tr	730	BOD 510.00162
715	V3:28tN23 351 06142 V3:28t	731	B280G 311.000157
716	Gn9:M98 508.3 Au	732	B830D66 517.380001621
717	AaM9 016.5 As		

REFLECTIONS AND TRANSLATIONS

733	C470E 537.7000154	751	Az7 504
734	D660D3 621.0001622	752	B9:78e 525.69
735	E0M3 580.00164	753	CzM71:9 530.92
736	H0J 550.00163		Cu
737	I0JA 580.0016349	751	D66:296q73 621.3198200037
738	K0L 590.00161		D66:296q
739	S0Z 150.1334	755	E7y8 574.19072
740	TOY 370.0013	756	F55p1:N28 662.60831
741	T0Δ 370.1		F55p1
	T	757	GzM25 570.81
742	E22:C6:14 541.341		Gz
	E22:0	758	Hv1:M9 550.9
743	F55:E3 513.8		Hv
744	G:7:B28 574.1340001311	759	Ha4:42:M56 016.55
745	H2:C2:53 552.00015393		Ha
	H2:C2:5	760	Ga4:173:M6 016.57
746	J.198:H42 631.091300015513		Ga
747	J:X:8:21:N2 630.9548	761	X:9a4:573 016.331
	Jv21		X:9a
748	J:P31:J4:6 630.0013989	762	EaM9 016.54
749	X62:Z3 332.10001346		Ea
750	T:3:P5:S 375.4D000115	763	JAu7355:N2 634.909792
	T:3:P:S		JAu7355
		764	Jr262 630.0039
			Jr
		765	Lk 610.3

TRANSLATIONS

766	O:1M61:9	781	Jm298:M82
	821.91		630.5
	O:1M		Jm
767	V2:2tN33	782	Jm3:M38
	342.54061		630.5
	V2:2t		Jm
768	X6t8:N35	783	B9:17e
	332.0619405		529.30832
	X6t8:N3	784	D::71s
769	X9M7t231:N37		625.730836
	831.18677061547	785	Ic
	X9M7t231		580.74
770	X9D66s2:N3	786	N1:9A
	338.4762100031		727.5
	X9D66s	787	XM25y7
771	JAs2		834.092
	634.900031	788	Q23y5
	JAs		294.5
772	U:1f		Q2
	912	789	Q111z7
	Uf		294.104
773	L:2f		Q1z7
	611.084	790	B30X8
774	MK441 2f		517.0001368
	599.73584084	791	B280J
	K:2f		511.000163
775	B96f	792	B280T
	523.8084		511.00037
776	YjM74	793	B280D
	S		519.000162
	Y	794	B330D
777	MY2m2:N36		517.38000162
	796.05	795	B393M240D
	MY2m		517.35000162
778	Jm2:M76	796	B460C
	630.5		512.89000153
	Jm	797	C470D
779	Jm2:N31		536.7000162
	630.5	798	D660J
	Jm		621.000163
780	Jm2:N13	799	E0Z
	630.5		540.00134
	Jm		

TRANSLATIONS

800	D0H 620.00155	818	H7:C6 553.10001537
801	H0J 550.00163	819	H21:E2 552.100015413
802	I0J 581.6	820	H1441:E28 549.6 H1441
803	S0T 150.1337	821	J:E 630.24
804	T0S:7 370.1 T	822	J:G:6 631.522
805	B:R 510.0011	823	J:I 630.28
806	B:R1 510.00116	824	J248:G:5567 633.31 J248
807	B:R13 510.001168	825	J378:G:64 635.64 J378
808	E:B1 540.001611	826	M71:11:Y1:4351:5 677.212110001658284
809	F:D 660.00162	827	L71:E 612.82000154
810	F:E3 543 E3	828	MK31:73:I21 637.23000158995
811	F:I21 663.1 F54	829	MK311:71:E30175 638.3262000154615
812	F547:E 663.2	830	P:R 401
813	F555:E3 665.5 F555	831	S:73:B28 159.923380001311
814	F5594:C433 662.200015366 F5594:C43	832	T2:475:B:B28 371.260001311 T2:475:9B28
815	G1:C5 577.0001535	833	X8:B28 368.0001311
816	H:E2 550.0015413	834	D3:Z3 622.00037 D3:Z
817	H1:8:B27 548.0001512 H1:8:B2	835	CaaN2 016.01653 Caa

TRANSLATIONS

836	Dam3:N21 016.6205 Dam	854	L83:C2:630L:64 611.730001541321000161G
837	Jba:N3 016.63 Ja	855	J381:G5:2:B28 683.18000158149720001311
838	Fcn78:N20 660.7205 Fcn	856	Aek 507.803
839	Den3:M94 620.83205 Den	857	Awk 509.203
840	Hu3CB8g 554.24102	858	Iwn1:N30 580.92058
841	O:2xm3:N31 822.082205 O:2xm	859	Ork 800.9203
842	Y19Q3wk 294.409203	860	Ork 808.803
843	Z2y7k 349.540403	861	Aem53:N12 507.805 Aem
844	O:1x0Y131 821 08220001323354	862	Awn1:N02 509.2059 Awn
845	O:2J64:90P:75 822.33018800011552	863	Awm73:M77 509.205 Awm
846	Q111:21:90H 294.10188000155 Q1:90H	864	Cun1:N35 530.58 Cn
847	Dm:B28 620.50001311	865	Een1:N07 540.832059 Ecn
848	L0Z8e 340.608346	866	Eun1:N05 540.58 En
849	R0D0J 510.00162000163	867	Ebn3:N06 540.58 En
850	U280J:B28 630.25150001311	868	Gwn73:N07 570.92058 Gwn
851	X8:B28e 368.00013110835	869	L:4:52sm594:N21 614.50008105 L:4:52sm
852	U:P111:J4k 910.00143303		
853	V83:26:9Zk 352.094500013408		

REFLECTIONS AND TRANSLATIONS

870	L91:51sm73 614.180003105 L:51sm	886	Cam3:M98 016.5305 Cam
871	M1wK4h 655.09203 M1u k	887	D854am3:N28 016.6281605 D854am
872	M1wK6k 655.09203 M1wk	888	Eam3:N26 016.5405 Eam
873	Δ :8icn1:N25 159.961092058 Δ :8icn	889	Eam73:N07 016.5405 Eam
874	Q6v3k 220.94203	890	F191am73:N33 016.66905 F191am
875	Y19Q62u n3:N07 282.942092058 Q62ion3	891	Tn72aN3 016.37 Ta
876	V223:28wn 351.20954805	892	1aN2 016.01 1a
877	Xsn1:N27 330.0031058 Xsn	893	EaaN3 016.01654 Eaa
878	X:54n3 382.0942058	894	HaaN2 016.01655 Haa
879	X9Jsn1:N10 338.100031058 X9Jsn	895	Q6a4:3111aN3 016.01622 Q6aa
880	X9Jsn2 338.100031058 X9Jsn	896	Gaa2:173:N2 016.01657 Gaa
881	Ysf73 317.3084	897	O:x03CE4 820.822 O:x
882	Z1y7k 341.09203	898	O15:1x0R4 891.210822000117
883	Z33:6y7k 341.594109203	899	O:1J52:90P 821.31018800014
884	BeaN2 016.51 Ba	900	O:2J64:90w 822.330188000192
885	B9faN3 016.52 B9a		

TRANSLATIONS

901	O:2J64:90I 822.330188000158	920	X16:P41:4k 351.816
902	O:2J61:90L 822.330188000161		X46
903	O:2J64:90M194 822.33018800010296	921	X:5:Z3y7k 317.709203
904	O:2J64:90N8 822.330188000178	922	JA:X:8q2 634.90003
905	O:2J64:90N91 822.3301880001732	923	JA:X:8 X9JA:Z21qN82
906	O:2J64:90P:7:78 822.3301880001804		338.174900037
907	O:2J64:90P:3:34 822.33018800014257		X9JA:Z
908	O:2J64:90Q6:4146 822.3301880001249	924	X9J:Zn1:N12 338.10003058
909	O:2J64:90Y115-48 822.33018800011796		X9J:Zn
	O:2J64:90Y148	925	J:Ep2:N17 630.24063
910	O:2J64:90Y17 822.3301880001572		J:Ep
911	O:2J64:90Z 822.330188000134	926	J:G:6aN3 016.631522
912	Q6:2:90Q4 220.18800012943		J:G:6a
913	Q6:2:90V2 220.1880001954	927	G:B28m3:N24 570.00131105
914	Q6:22:90Y1:351 221.018800013983		G:B28m
915	L0Zk 340.603	928	G:B28t3:N27 570.00131106142
916	X895:Z3z 353.200013465		G:B28t3
917	XM55:Z3k 347.703	929	L18522:33:94:B28 612.3970001311
	X:Z3k		L:33:94:B28
918	X627:P111:4k 832.6103	930	JAS8.71:9153e 634.546520832
	X627k	931	Q6:22:90V:76s 221.0835
919	X47:Pk 653.2703	932	O:8um1:N22 820.1880838058
	X47k	933	Y1:4511:2:53CG3:9B280L0Z 179.7000131100018406
			Y1:4511:B280L0Z

REFLECTIONS AND TRANSLATIONS

934	L0Z2:P:4k 340.6095403 L0Z2k	949	902jM80 042.0001954 902
935	J:G:6am3:N30 016.63152205 J:G:6am	950	904uM6 950.92 904w
936	V3:23b2:9Zz 324.2700013465	951	E390210 545.000154611 E30210
937	Y17561:2:136-82 573.6 Y1:2	952	L515:E390118 612.46163000154691
938	L185-73:63:J641 615 3360001612843	953	L:33:1480122 612.3988000154686 L:440122
939	Y111-31:720Y111-33 159.922640005992262 Y131:70Y133	954	L32-83:33:2100J45F7 615.711 L32:33:J45F7
940	L51-12:4:6 616.61 L51:4	955	U426:73041:N2 325.251 U426:41
941	L72-35:3 612.83 L72:3	956	V53:19041qN30 341.244 V53:19q
942	L18517-38:63:56 615 3000161284313	957	V1:190X627qN30 341.2000133277 V1:190X627q
943	Y111-31:10Y111-33 630.1 Y131	958	V73:190740Z102957:N3 341.27300013339 V73:190Z102957
944	T55-4:5 376.64 T55-4	959	X:5:3063:N3 332.0942 X:54:3
945	Y115-68:43:6y7 262.404 Y16:4:6y7	960	X9J98207:536:730981.N3 337.563460978 X9J982:536:73
946	502:3:N27 052.0001954 502:3	961	52035:N33 059.94813 52035
947	520152:N2 059.9143 520152	962	502-2:2:N28 052 52
948	501-3:3:M68 062.0001942 503:3		

TRANSLATIONS

963	902;M52 042.0001954 902	977	X9J341073:536:804363:N3 337.563361 X9J341:536
964	902wM57 954.092 902w	978	X9J:54:5205923:N2 382.045 X:54:52
965	902xL65 042.0001954 902	979	BrM87:9 517 B13
966	902xM37 042.0001954 902	980	RxM62:9 192.9 R856
967	MK31:74:E30971 637.222 MK31:74:E3	981	R635x11k 181.4 R6
968	G:83:940972 612.3972 G:83:94	982	O:9xM88:9 820.188 O:9
969	U425:201-3:N3 325.254 U425:2	983	O:9xM84:1 820.188081 O:9x
970	U425:74073:N2 325.272 U425:74	984	O:9xM84:2 820.188081 O:9x
971	V53:1902:L0 327.4400954 V58:1902	985	BrK42:1:9 51 B
972	V2:190420X:N3 327.5400952000183 V2:190420X	986	O:9xL95:9 820.188 O:9
973	V53:190580X05:M6 827.4400947000138 V53:190580X05	987	O:9xM37aN2 016.82 O:9
974	V73:19030X4:N8 827.7809420001887 V78:19080X4	988	Δ6xK88p1:N10 289.4063 Δ6xK88p
975	V73:8-1907:M6 827.78070002 V73:8-1907	989	RxK32:90Q4 193.9 R855
976	X:5:2042:N8 382.0954 X:5:2	990	RxM61aN3 016.1919 R878a

REFLECTIONS AND TRANSLATIONS

991	RxM80.1	1,000	X:9:Zr1:N0
	193.9		331.000134
	R855		X:9:Z
992	RxM80.2	1,001	Q6:2233:9
	193.9		224.30188
	R855	1,002	T3h73:M60vN0
993	RxM80:1		374.97446
	193.9		T3h73:M60
	R855		
994	RxM80:5	1,003	P1:1:15808z
	193.9		411
	R855		P1:1
995	RxM80:6	1,004	O:6M00w
	193.9		824.83092
	R855	1,005	V31:2qG15
996	RxM80:9		342.42033
	193.9		V31:2:G1
	R855	1,006	Lb3v1:N0
997	Z52x1		610.7
	349.372		Lb3
998	Z52x1:9	1,007	9074
	349.374		972
999	2xM92aN4	1,008	H697975y7M92
	016.02		573.3
	2a		Y171

SOLUTIONS TO THE EXERCISE AT THE END OF CHAPTER 51

MILITARY SCIENCE

Rules

- MV40 Three trains of characteristics are to be used for the subdivision of Military Science, viz. Force or 'F', Problem or 'P' and Material or 'M'.
- MV401 The three trains of characteristics forming the basis of classification of military science are to be taken in the order 'F', 'P', 'M'.
- MV402 The Number corresponding with these trains of characteristics may be termed the Force Number, the Problem Number and the Material Number respectively.

TRANSLATIONS

- MV403** The symbols and the appropriate divisions on the basis of each of these trains of characteristics are given in the schedule MV4.
- MV499** If a specific subject is concerned with a specific war, the Canonical Class MV4 is to be amplified by the Chronological Device before the divisions based on the trains of 'F', 'P' and 'M' Characteristics are applied to it. The Chronological Number is to be worked out to three digits, the year of commencement of the war being used as the epoch.
- MV499u** Accounts of specific campaigns are to be individualised by the use of the Common Subdivision u which is to be amplified by a colon followed by 1, 2, 3 etc. on the octave principle to represent the successive campaigns in their order of occurrence, subordinate events of a campaign being represented by subdivisions of its number.
- MV499u1** The following special geographical divisions may be used to amplify u geographically to represent the special alignment of the war:
- 1993 Neutrals
 - 19934 Armed neutrals
 - 1995 Belligerents
 - 1996 One side
 - 1997 The other side
 - 1998 Occupied territory.
- MV499y7** For lives of combatants y7 should be used instead of w.
- MV499z7** For personal narratives which do not warrant the use of x or y7, z7 is to be used.
- MV4993** For use in the main classes Geography, History, Economics and Sociology, in the case of subjects concerned with a specific war which class with these subjects, the Geographical Division 'I World' or that of any other total area involved may be divided by the Chronological Device and the Chronological Facet of the main class may be omitted. The Chronological Division is to be worked out to three digits, the year of commencement of the war being used as the epoch.

REFLECTIONS AND TRANSLATIONS

MV49931 The Geographical Number amplified by Rule MV4993 may be further amplified to represent the special alignment of the war.

Illustrative

For use after <i>u</i>	Area	For use in U, V, X, Y1
1996	United Nations	1N396
1997	Axis Powers	1N397

SCHEDULES

MV4[F]: [P]: [M]

Divisions based on the train of Divisions based on the train of

Force or F <i>Characteristics</i>		Problem or P <i>Characteristics</i>	
1	Land	1	Nomenclature, classifica- tion etc. (to be sub- divided as in G)
11	Infantry		
12	Mounted force (To be subdivided as the Animal Division 44 of MK)	2	Practices and mobilisa- tion
	<i>Illustrative</i>	3	Field activity
122	Cavalry	311	Base. Fortification
13	Mechanised force	312	Defence
134	Tank corps	313	Invasion
4	Signal corps	32	Strategy
5	Navy	33	Siege, blockade, raid
51	Boats	34	Scouting, spying
52	Cruisers	35	Atrocities
53	Battleships	353	Devastation
54	Men of war	356	Chemical warfare. Poison gas
55	Submarines	357	Atrocities to person
6	Technical services	3571	Children
64	Engineers	3572	Youth
66	Artillery	3575	Women
8	Air force	4	Treatment of wounded and sick
81	Dirigibles		
82	Fighters	5	Intercommunication between belligerent forces
83	Bombers		
84	Airfortresses		

TRANSLATIONS

65	Prisoners of war	342	Pyrotechnics
7	Economic war	344	Gunpowder
8	Organisation	35	Propellants
	(To be subdivided as in X)	351	Shots
		352	Shells
91	Causes of war	353	Detonators
97	War aims	354	Bombs
98	Cessation of hostilities	355	Torpedoes
		356	Granadoes
<i>Divisions based on the train of</i>		358	Mines
	Material or M	4	Transport (track)
		5	Transport (vehicles)
	<i>Characteristics</i>		(4 and 5 to be subdivided as in D)
1	Human resources		
14	Regulars	6	Machines
17	Privates	61	Guns
2	Material resources	614	Anti-tank guns
21	Natural	616	Machine guns
22	Industrial	618	Anti-aircraft guns
	(21 and 22 to be subdivided by Substance Number)	8	Other equipment
		81	Tents and camping equipment
26	Monetary resources	82	Utensils
3	Ammunition	83	Implements
34	Explosives	88	Apparatus
341	Initiators	91	Nomenclature etc.

Some of the New Classes opened in the 14th edn. of the *Decimal classification* with their Colon and Decimal Numbers.

World War, 1939

Colon No.	Subject	Decimal No.
MV4N39	Military matters	940.53-.54
V1N39:1	Political history	940.531
V1N39:12	Post-war reconstruction	940.53144
V3:12:N4	Do. in Great Britain	?
V1N39:120Y111	Relation to children	940.53161
V3:120Y111:N4	Do. in Great Britain	?
V1N39:19	Diplomatic history	940.532
V1N396:19	Do. United Nations	940.532 2
V1N397:19	Do. Axis Powers	940.532 4
V1N398:19	Do. Neutrals	940.532 5

REFLECTIONS AND TRANSLATIONS

Colon No.	Subject	Decimal No.
MV4N39:32	Strategy	940.5401
MV4N39:32u1996	Do. United Nations	940.54012
MV4639:32u1997	Do. Axis Powers	940.54013
MV4N39:32u42	Do. Japan	940.5401352
MV4N391	Land operations	940.541
MV4N391u1996	Do. United Nations	940.5412
MV4N398	Air service	940.5441
MV4N398u1996	Do. United Nations	?
MV4N398:33	Organised raids	940.5442
MV4N398:33u1997	Axis raids	?
MV4N3955	Submarine war	940.5451
MV4N3955u1897	Do. by Axis Powers	940.54512
MV4N3955u1996	Do. by United Nations	940.54513
MV4N395:311	Naval bases	940.5453
MV4N39:6	Exchange of prisoners	940.5473
MV4N39:L	Medical Department	940.5475
MV4N39:L:5	Sanitary affairs	940.54752
MV4N39:L:14	Hospitals	940.5476
MV4N39:L:4	Red Cross	940.5471
MV4N39z7	Personal narratives	940.548
MV4N39z7:1996	Do. United Nations	940.5481
MV4N39z7:3	Do. Great Britain	940.548142
MV4N39y7	Illustrative materials	940.549

Here are seven more specific subjects suggested for inclusion in M. E. Sear's *List of subject headings for small libraries*. They are taken from the extract from *Wilson library bulletin*, of 1943, published in the *Modern librarian*, V.13. P. 174.

World War, 1939

Colon No.	Subject	Decimal No.
XA7::53:N4	Finance of France	940.5344
X9F53:7:53:N4	Food question in France	940.5344
V53-3:2:N4	Government of France in exile	940.5344
MV4N39j	Maps	940.549
MV4N39:14	Pictorial works	940.549
MV4N39:65	Refugees	940.54
MV4N39::4	Transportation	385.387

TRANSLATIONS

The latter table shows the crowding of different specific subjects in one and the same Decimal Number and their getting a distinctive and co-extensive Colon Number.

Placing the 'World War 1939' in 94 European History is not quite right. But that is what the Decimal Classification is obliged to do.

A comparison of these schedules with the Decimal schedules of the last war shows utter lack of mnemonics. Nor is there consistent order. There was no clue in the latter, as to how the former would be constructed. But the Facet and Phase Analysis implemented fully by the Colon Classification gives autonomy to every intelligent classifier, who can, therefore, arrive at the correct number without looking to the headquarters for help even at such superficial levels. He can construct Colon Numbers not only for these specific subjects, but for many others, which though not mentioned in the above schedules, may crop up at any moment and have already cropped up.

INDEX

The reference is to Parts, Chapters and Sections.

C.C.	= Colon Classification
D.C.	= Decimal Classification
<i>Ex.</i>	= Example
<i>i.r.t.</i>	= in relation to
<i>q.i.r.t.</i>	= quoted in relation to
<i>r.i.r.t.</i>	= referred in relation to

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